glass

Libbey·Owens·Ford Glass Company

data for the architect

L O F

A.I.A. File Number 26-A—1947

The LIBBEY-OWENS-FORD GLASS COMPANY is one of the world's largest manufacturers of flat glass. The main office is in Toledo, Ohio, and sales offices are maintained in principal cities as listed on the back cover of this catalog.

Six factories with a combined floor area of 4,500,000 square feet are located in Rossford and East Toledo, Ohio, Ottawa, Ill., Shreveport, La., and Charleston and Parkersburg, W. Va.

All Libbey-Owens-Ford products for building purposes are sold and installed by authorized glass distributors and/or dealers.

The glass products manufactured and marketed by Libbey-Owens-Ford are reviewed on the following pages, according to the index below.

Page
L-O-F Polished Plate Glass 3
L-O-F *Color Clear** Plate Glass 3
L-O-F Colored Plate Glass 3
L-O-F Polished Plate Glass for Mirrors 4
L-O-F Transparent Mirrors 5
L-O-F *Thermopane** 6,7,8,9
L-O-F Window Glass 10
L-O-F *Tuf-flex** Tempered Plate Glass 11
L-O-F Heat Absorbing Plate Glass 12
L-O-F Decoration on Glass 13
L-O-F Bent Glass 13
L-O-F *Vitrolite**—See special insert—Section $\frac{13c}{7a}$
L-O-F *Glastone**—See special insert—Section $\frac{13c}{7a}$
L-O-F *Tuf-flex** Glass Doors—See special insert—Section $\frac{15b}{2}$

The following kinds of glass manufactured by the Blue Ridge Glass Corp., Kingsport, Tenn., are sold by Libbey-Owens-Ford Glass Company through leading glass distributors throughout the United States.

Page
Blue Ridge Figured and Wire Glass 14, 15
Five Leading Blue Ridge Patterns 16, 17
Blue Ridge Wire Glass 17
Practical Patterned Glass for Varied Industrial Requirements 18, 19
Blue Ridge Aklo Heat Absorbing and Glare Reducing Glass 20, 21, 22
Blue Ridge Securit Figured Rolled Glass 23
L-O-F District Offices 24

*Reg. U. S. Pat. Off.

LIBBEY-OWENS-FORD GLASS COMPANY

A Great Name in **GLASS!**

L·O·F polished plate glass

description

A transparent glass made by grinding and polishing the two surfaces of a glass blank with the objective of making them flat and parallel and providing clear vision with minimum distortion.

qualities

Silvering and mirror glazing quality plate glass is used for the finest mirrors and for high quality glazing in residences.

Glazing quality plate glass is used for general glazing purposes.

uses

⅛″, 13/64″—Small panes, leaded lights, railway coaches, mirrors, etc.

¼″—Windows of public and office buildings, residences and apartment buildings, show windows, show cases, street cars, railway coaches, shelving, table and desk tops, large mirrors, etc.

½″—Portlights, long shelves, glass furniture, background for decoration, etc.

½″ to 1¼″—Floor, deck and portlights on ships; aquarium tanks, glass furniture, table and desk tops, etc.

Color Clear* plate glass

Exceptionally clear and colorless, this L-O-F product does not detract from the true color of objects or merchandise behind it. Its quality is equivalent to that of regular plate glass.

***Color Clear* plate glass is ideal for Picture Windows, commercial refrigerator cases and mirrors.**

***Tuf-flex* tempered plate glass (page 11) is supplied in ¼″ thickness or over in any of the foregoing types of plate glass.**

colored plate glass

Libbey-Owens-Ford produces plate glass in the following colors: standard, medium and dark blue, peach and golden. Coloring is uniformly controlled so these glasses can be used for such glazing purposes as Picture Windows. They are also highly recommended for mirrors and decorative applications. It is furnished in quality equivalent to that of regular plate glass.

Golden plate is used also to cover documents, valuable papers and prints, and to glaze windows in department stores and homes since its low transmission of ultraviolet rays reduces fading which might be caused by these rays.

***Tuf-flex* tempered plate glass (page 11) is supplied in colored plate glass 7/32″ thickness or over.**

suggested specifications

Plate glass shall be Libbey-Owens-Ford and shall be of (........) quality, and (........) thickness in accordance with U. S. Government Standards DD-G-451.

***Reg. U. S. Pat. Off.**

edge finishing and special work

All types of flat glass may have their edges finished in various ways. The standard edge finishes are clean cut and swiped, clean cut and seamed, ground and seamed, flat ground, flat polished, bullnose polished, round polished, semi-round or pencil polished, mitered edges ground or polished, beveled edges ground or polished. Glass may be cut to size or to simple shapes with a glass cutter, and finished with abrasive belts and grinding and polishing wheels; holes may be drilled with hand or machine drills. Notches may be cut with a drill and glass cutter in combination. In cutting holes or notches, care should be taken not to exceed safe limits of glass. Notches are well to avoid where possible. Cut edges should be used only where edges are to be covered or protected by molding; abutting edges should be flat ground and exposed edges polished. Ground or polished, mitered or rounded grooves, depressions for hand holes, pen grooves, etc. may be wheel cut into surface of glass.

chart for specifying L-O-F polished plate glass.

Type or Color	Thickness	Thickness Tolerance	Standard Maximum Width and Length	Maximum Size Special Order	Approx. Weight Lbs. Per Sq. Ft.
Regular	⅛″	±1/32″	72″ x 74″	74″ x 144″	1.64
	13/64″	±1/32″	72″ x 74″	74″ x 144″	2.65
	¼″	±1/32″	124″ x 170″	124″ x 250″	3.27
	⅜″	±1/32″	100″ x 150″	100″ x 200″	4.90
	½″	±1/32″	100″ x 160″	100″ x 200″	6.54
	⅝″	±3/64″	80″ x 140″	100″ x 160″	8.17
	¾″	±3/64″	80″ x 130″	100″ x 150″	9.81
	⅞″	±1/16″	40″ x 100″	50″ x 100″	11.44
	1″	±1/16″	40″ x 100″	50″ x 100″	13.08
	1¼″	±1/16″	40″ x 100″	50″ x 100″	16.25
Color Clear	⅛″	±1/32″	40″ x 80″	55″ x 90″	1.64
	¼″	±1/32″	70″ x 140″	90″ x 140″	3.27
Colors:					
Standard Blue	7/32″	±1/32″	100″ x 140″	110″ x 170″	2.86
Medium Blue	7/32″	±1/32″	100″ x 140″	110″ x 170″	2.86
Dark Blue	7/32″	±1/32″	100″ x 140″	100″ x 170″	2.86
Peach	7/32″	±1/32″	100″ x 140″	100″ x 170″	2.86
Golden	7/32″	±1/32″	95″ x 120″	100″ x 150″	2.86

Modern Visual Front of polished plate glass enables this store in Jamestown, New York to display its merchandise day and night.

L·O·F polished plate glass for mirrors

description

L-O-F Polished Plate Glass because of its clearness and flatness and minimum of imperfections, is ideal for the manufacture of all types of quality mirrors.

Libbey-Owens-Ford Glass Company does *not* manufacture and sell chemically deposited mirrors for architectural purposes, but supplies polished plate glass to many of the leading mirror manufacturers.

uses

Mirrors are playing an increasingly important part in modern decoration and design. Architects and designers have found that mirrors bring increased light, beauty, sparkle and spaciousness into residences, hotels, apartment houses and public buildings.

A recent use of mirrors is to double the apparent size of a room or space by facing one wall or two adjoining walls with large mirror sections, attached with rosettes or mastic. For successful illusion the room must be designed as a half or a quarter of a room so that important features occur at the intersection of mirror-to-wall, mirror-to-ceiling or mirror-to-mirror.

Circular mirrors for dining rooms, fireplace-to-ceiling mirrors for living rooms, full length plate glass mirrors for bedrooms and dressing rooms, built-in mirrors for smart powder rooms—all aid in introducing charm and dignity into modern homes.

Commercial uses for mirrors are wide and varied—up-to-minute department stores and showrooms use large areas of mirrored surfaces for background effects, triple mirrors in clothing sections, overhead mirrors for decorative purposes. Mirrored walls and ceilings are used extensively in bars, restaurants, clubs, theaters, etc. and add decorative beauty and spaciousness where room is limited.

size limitations

When facing wall areas with large mirror sections, it is generally advisable to keep the size of the sections within 7 x 12 feet, although larger dimensions can be furnished for special conditions. Larger wall areas may also be covered with a series of adjacent mirrors.

qualities

Mirrors are graded according to the quality of plate glass used. "A"—(Silvering Quality) used only for the finest mirrors. No. 1 (Mirror Glazing Quality) used for all types of selected mirrors. No. 2 (Glazing Quality) used for all other plate glass mirrors which are termed "commercial" mirrors.

These standards correspond to those established by the Department of Commerce through the National Bureau of Standards as Commercial Standard CS27-36.

Specify L-O-F Polished Plate Glass mirrors to insure the finest glass quality.

Floor-to-ceiling polished plate glass Mirror doubles the apparent size of this smart Toledo jewelry shop. Architect: Bellman, Gillet & Richards.

Generous use of mirror on the wall of this living room makes it seem much larger and lighter. Designer: Rudi Blesh, Burlingame, California.

L·O·F transparent mirrors

description

Durability and permanence are outstanding qualities of L-O-F Transparent Mirrors—a new L-O-F product using evaporated chromium alloy for "One-Way Mirror" installations.

With a light transmission of approximately 15% and a light reflection from the mirrored side of about 45%, the specially treated plate glass when properly installed serves as a mirror from the front, but is transparent when viewed from the back. For example:

When an L-O-F Transparent Mirror is installed between two rooms one of which is brightly lighted and the other dimly lighted, an observer in the dark room can see into the lighted one, but the glass has the appearance of an opaque mirror in the illuminated room. The perfection of the performance is governed by the difference in brightness between the two rooms. The mirrored side should be installed toward the room into which a view is desired.

uses

The following suggested uses for L-O-F Transparent Mirrors are a few of many possible applications:

In residence entrance doors, hospital observation windows (particularly psychiatric), show windows, nursery doors in residences, instrument manufacturing (used in cameras and other scientific instruments), night clubs and taverns, security windows in government offices, banks, post offices, FBI offices, police departments, private offices, factories and institutions, and colleges and universities (psychology departments). The mirrors also are suitable for novel advertising signs and show windows.

durability

L-O-F Transparent Mirrors have been thoroughly tested in our laboratories and, wherever used, have been found to be satisfactory. Thousands were used in instruments during the war. They are highly resistant to the normal action of weathering, cleaning, handling and glazing compounds encountered in commercial glazing installations.

uniformity

L-O-F Transparent Mirrors are exceptionally uniform in quality. Such variation as may exist is not apparent to the normal eye in commercial installation.

A bare spot $\frac{3}{16}$″ x 1″ at the top and bottom edges of all transparent mirror stock sheets will be found. This is inherent in the manufacturing process and should be concealed in the installation.

advantages

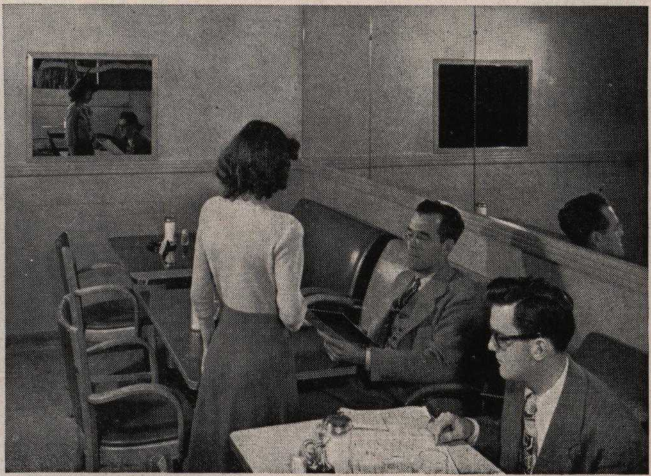
The new L-O-F Transparent Mirror, coated with evaporated chromium alloy, has many advantages over the chemically deposited transparent mirrors now on the market. Among its merits are permanence of coating and fidelity of color of objects viewed through the mirror.

sizes

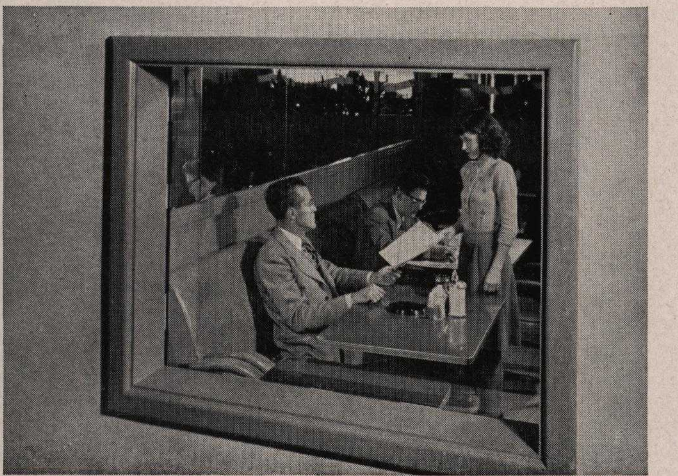
L-O-F Transparent Mirrors are furnished only in $\frac{1}{8}$″ plate glass and in the following three stock sheet sizes:

12″ x 40″ 20″ x 40″ 30″ x 40″

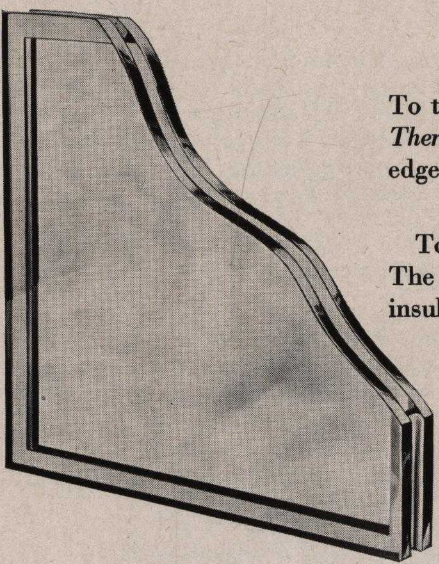
Note: Other sizes and thicknesses would be considered upon application.



This photo shows the high reflective qualities of the silvered side of the L-O-F Transparent Mirror. (Upper left-hand corner).

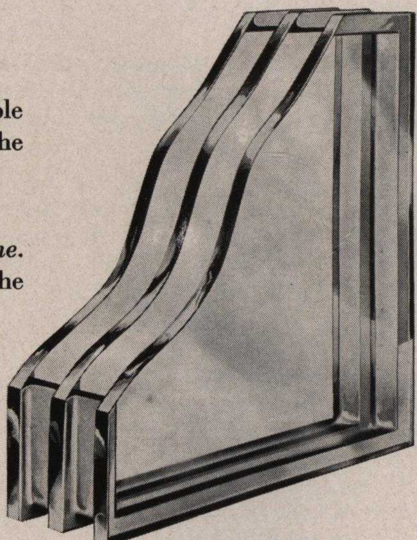


In this picture, the restaurant's activities are clearly seen through the same Transparent Mirror from the manager's office.



To the left is shown a cutaway view of double *Thermopane*. The metal-to-glass bond seals the edges of the two panes of glass.

To the right is a view of triple *Thermopane*. The additional pane and air space increase the insulating value of the glass unit.



description

Thermopane is the first successful, mass-produced, insulating unit of its kind for general use. It is a factory-built transparent glass unit composed of two or more lights of glass separated by ¼″ or ½″ of dehydrated captive air, hermetically sealed around the edges at the factory with a patented metal-to-glass bond.

manufacture

L-O-F *Thermopane* can be furnished in squares, rectangles or straight edge shapes, providing angles on such shapes are not too acute. It is generally fabricated to ordered sizes, but new Standard Sizes for double *Thermopane* recently have been developed. (See page 8.) The glass is specially washed before the patented Bondermetic Seal is applied. The air hermetically sealed inside *Thermopane* units is scientifically cleaned and dried.

four features

1. *Greater year-round insulation* against cold and heat. Makes living conditions more healthful and comfortable. Saves fuel.
2. *L-O-F's Bondermetic Seal.* This metal-to-glass seal bonds the panes of glass into one unit to guard against dirt and moisture entering the dry air space.
3. *Clearer Vision.* The sealed-in dry air greatly reduces the possibility of condensation on the glass.
4. *Only Two Surfaces to Clean.* The glass surfaces inside a unit are specially cleaned at the factory.

uses

Double-glass *Thermopane* is practical for glazing of wood or metal windows and doors in homes, apartments, schools, hospitals and other structures requiring heating or air conditioning.

Triple-glass *Thermopane* is recommended for frozen food display cases and show windows to help protect perishable foods.

heat loss transmission

Thermopane units provide a high resistance to heat flow, varying with the number of panes and the thickness of the air space. In summer *Thermopane's* low heat transmission coefficient reduces the load on air conditioning systems. In winter it saves heat. The greater efficiency of *Thermopane* compared with single glazing makes it possible to use larger windows and keep the cost of fuel constant. For example, a house could have 115 square feet of *Thermopane* instead of 40 square feet of single glazing without any increased loss of heat. *Thermopane* permits the influx of a large amount of solar heat through exterior glazing of buildings without a prohibitive compensating loss by conduction. By combining various types of heat-absorbing and colored glass in the fabrication of *Thermopane*, the amount and quality of light transmission may be controlled, if this is desirable.

Because *Thermopane* is an insulating unit, it reduces the coefficient of heat transfer. This increases the temperature of the *Thermopane* surface facing the room side, thereby reducing "windowpane chills" and making living conditions more healthful and comfortable.

The insulating factor allows the architect much more latitude in room design. Because the glass areas in single glazings cause a "cold spot" in the room, radiators or warm air grills are usually located near or under windows. With the warmer window temperature when *Thermopane* is used, the architect has more flexibility in planning heating outlets.

heat transmission table

The over-all heat transmission coefficient U varies with the ranges of temperature at which the coefficient is determined. For most practical heat loss calculations, coefficient U can be the value determined at 10 degrees outside temperature, 70 degrees inside temperature, 15 mph outside air velocity, 0.25 mph average inside air velocity. The following table gives such values from actual tests with glass sizes 30″ x 30″:

Number of Panes	Glass Thickness	U Value		
		Air Space		
		None	¼″	½″
Single Glass	⅛″	1.16		
	¼″	1.15		
Double *Thermopane* (one air space)	⅛″ or ¼″		.65	.58
Triple *Thermopane* (two air spaces)	¼″		.47	.40

extra strength conditions

Where extra strength in glazing is required to withstand high pressures which would rupture standard plate glasses, *Thermopane* can be manufactured from ¼″ *Tuf-flex*. (See page 11.) Where unusual pressure and high wind velocities exist, consult Libbey-Owens-Ford engineering service before specifying *Thermopane* requirements.

double Thermopane standard sizes

The new standard sizes for double *Thermopane* recently have been developed by Libbey-Owens-Ford in cooperation with leading manufacturers of wood and steel sash in answer to requests from many architects and designers. These standard size *Thermopane* units comply with the American Standards Association 4″ modular construction.

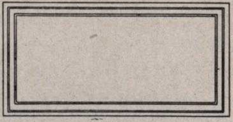
advantages

There are numerous advantages to specifying standard *Thermopane* sizes. Manufacturers of wood sash have developed standard Picture Window frames and sash units using them. Glass distributors and wholesale sash and door jobbers will carry warehouse stocks of these units, thus making *Thermopane* more readily available. Architects can incorporate standard sizes in their specifications. Replacements and duplications of orders will be handled more quickly.

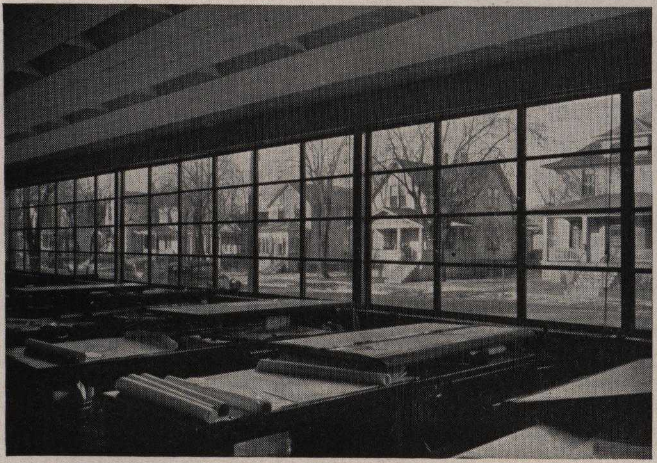
picture window standard sizes

The new standard *Thermopane* units are being manufactured in a wide range of sizes, readily adaptable by architects for new construction and remodeling.

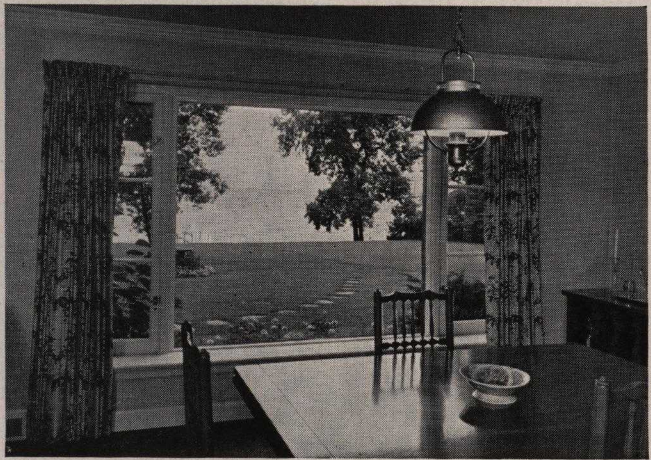
The sizes for Picture Windows in single lights, double hung wood window units and residential steel sash casements are shown below and on next page.



42″ x 66″ 66″ x 84″ 72″ x 84″
42″ x 72″ 66″ x 96″ 72″ x 96″



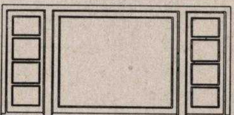
All office windows of the Giddings & Lewis Machine Tool Co., were glazed with *Thermopane*. Architect, Frank Stepnoski and Son, Fond du Lac, Wis.



This attractive *Thermopane* Picture Window overlooks Lake Michigan at Fox Point Colony, Milwaukee, Wis. Architect, H. Schmitt.

L·O·F *Thermopane* (continued)

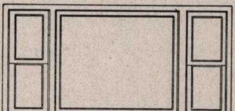
standard wood picture window units with flanking casements



Note: Standard double *Thermopane* units for above are composed of two ¼″ panes of polished plate glass with ½″ air space.

Window Opening (Including the Casement Units) Width Height	Picture Window Glass Size Width Height
6′-5¼″ x 4′-2⅜″	35½″ x 48⅛″
8′-1″ x 4′-2⅜″	55¼″ x 48⅛″
9′-8¾″ x 4′-2⅜″	75″ x 48⅛″
6′-5¼″ x 5′-2 9/16″	35½″ x 60⅜″
8′-1″ x 5′-2 9/16″	55¼″ x 60⅜″
9′-8¾″ x 5′-2 9/16″	75″ x 60⅜″

standard wood picture window units with flanking double hung windows



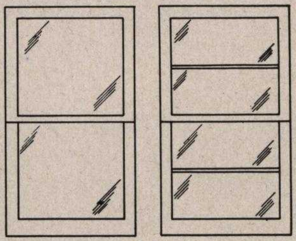
Note: Standard double *Thermopane* units for above are composed of two ¼″ panes of polished plate glass with ½″ air space.

Picture Window Sash Opening (Without double hung unit) Width Height	Picture Window Glass Size Width Height
4′-4″ x 4′-6″	48½″ x 50″
5′-0″ x 4′-6″	56½″ x 50″
5′-8″ x 4′-6″	64½″ x 50″
6′-4″ x 4′-6″	72½″ x 50″
7′-0″ x 4′-6″	80½″ x 50″
8′-4″ x 4′-6″	96½″ x 50″
5′-8″ x 5′-2″	64½″ x 58″
6′-4″ x 5′-2″	72½″ x 58″
7′-0″ x 5′-2″	80½″ x 58″
8′-4″ x 5′-2″	96½″ x 58″
10′-0″ x 5′-2″	116½″ x 58″

Note: Window openings will vary according to individual sash manufacturer's specifications. Therefore, manufacturers should be contacted for full information regarding their units.

double hung windows

Wood sash manufacturers offer 1¾″ check rail double hung windows, ASA modular coordinated, in both two-light and four-light horizontal sash as illustrated at left.

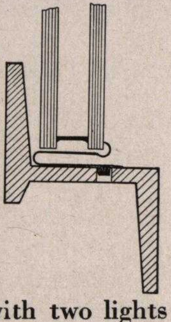


The complete range of standard sizes for double *Thermopane* double hung units is shown in the table below.

Window Opening		Glass Sizes	
Width	Height	2-Light	4-Light
2′-4″	4′-6″	24″ x 24″	24″ x 11⅝″
2′-8″	4′-6″	28″ x 24″	28″ x 11⅝″
3′-0″	4′-6″	32″ x 24″	32″ x 11⅝″
3′-4″	4′-6″	36″ x 24″	36″ x 11⅝″
3′-8″	4′-6″	40″ x 24″	40″ x 11⅝″
4′-0″	4′-6″	44″ x 24″	44″ x 11⅝″
2′-4″	5′-2″	24″ x 28″	24″ x 13⅝″
2′-8″	5′-2″	28″ x 28″	28″ x 13⅝″
3′-0″	5′-2″	32″ x 28″	32″ x 13⅝″
3′-4″	5′-2″	36″ x 28″	36″ x 13⅝″
3′-8″	5′-2″	40″ x 28″	40″ x 13⅝″
4′-0″	5′-2″	44″ x 28″	44″ x 13⅝″

Double *Thermopane*, manufactured with two lights of Double Strength "A" quality L-O-F Window Glass with ¼″ air space between, is standard for double hung windows.

special glazing clip



For satisfactory glazing of *Thermopane* in steel sash, use special clips developed by Libbey-Owens-Ford. The illustration to the right shows application of the glazing clip.

residential steel sash

Double *Thermopane*, manufactured with two lights of Double Strength "A" quality L-O-F Window Glass with ¼″ air space between, is standard for residential steel casement windows.

standard Thermopane sizes

16″ x 12″, 16″ x 11 5/16″, 14″ x 12″, 14″ x 11 5/16″, 14″ x 10″, 14″ x 9 5/16″, 14¾″ x 12″, 17¼″ x 12″, 12″ x 12″

glazing instructions

It is extremely important to remember that *Thermopane* is a factory-fabricated unit and once made to specification, its dimensions cannot be changed at point of use. Proper glazing clearances must be allowed on all *Thermopane* units, as well as sufficient rabbet depth, so that the metal seal does not show.

The following instructions must be observed for the successful installation of *Thermopane*:—

1. Check sash openings for squareness and full unit edge clearance.
2. Use good grade of glazing compound, free from corrosive materials.
3. Have compound soft, and completely bed putty sash before inserting unit.
4. Press *Thermopane* in evenly. Do not force so as to twist the unit.
5. Do not nip corners. This breaks the seal. Rather trim the sash or rotate the unit. It may go in freely.
6. Allow equal clearance on all edges between glass and sash.
7. Point up all edge voids between glass and sash.
8. Apply glazing compound on all face edges.
9. If wood stops or metal angles are used, do not exert undue pressure so that face putty is squeezed out, or unit is under strain at nail or screw points.
10. *Thermopane* must have a sufficient bed of glazing compound so that neither wood nor metal comes in contact with the glass at any point.*
11. Lights over 80 united inches must be supported on soft surface setting blocks. (Soft rot-proof wood, soft lead, or, steel or aluminum blocks with soft lead tops). These setting blocks must be the same thickness as the *Thermopane* unit.
12. Setting blocks should be located in from each corner and centered a distance of ¼ the length of the light.
13. *Thermopane* units constructed with one light of Heat Absorbing Plate or Blue Ridge Aklo must be glazed with the Heat Absorbing Glass to the outside.
14. These glazing instructions are packed with each *Thermopane* shipment and our warranty does not apply unless they are followed.

*Exception: Approved metal storefront construction.

standard specifications

All insulating glass shall be *Thermopane* of sizes indicated on the drawings and composed of (two) (three) (........) panes of ....glass.......... thick, hermetically sealed with a metal-to-glass bond and separated by a (¼") or (½") dehydrated air space, as manufactured by Libbey-Owens-Ford Glass Company, Toledo, Ohio, and installed according to manufacturer's instructions.

double Thermopane types of glass and sizes

Type of Glass	Min. Size ¼" or ½" Air Space	Maximum Size With ¼" Air Space	Maximum Size With ½" Air Space	Thickness Range		Dimensional Tolerance	Approx. Aver. Net Weight per Sq. Ft.
				¼" Air Space	½" Air Space		
D.S.A. **⅛" Blue Ridge Figured** **⅛" Plate** **⅛" Heat Absorbing Plate**	8" x 8"	32" Max. Width 76" Max. Length Length not to exceed 4½ times width Total Area 1400 sq. in.	24" Max. Width 76" Max. Length Length not to exceed 4½ times width Total Area 1400 sq. in.	$\frac{7}{16}$" to $\frac{9}{16}$"	$\frac{11}{16}$" to $\frac{13}{16}$"	8" to 32" wide to 48" long +$\frac{1}{16}$" −$\frac{1}{16}$" 48" to 76" long +⅛" −$\frac{1}{16}$"	3½ lbs.
3/16" Sheet	8" x 8"	42" Max. Width 72" Max. Length	42" Max. Width 72" Max. Length	$\frac{9}{16}$" to $\frac{11}{16}$"	$\frac{13}{16}$" to $\frac{15}{16}$"	8" to 36" wide +⅛" −$\frac{1}{16}$" 36" to 98" wide +$\frac{3}{16}$" −$\frac{1}{16}$"	5 lbs.
¼" Plate	8" x 8"	48" Max. Width 132" Max. Length Total Area 4800 sq. in.	98" Max. Width 132" Max. Length Total Area 9600 sq. in.	$\frac{11}{16}$" to $\frac{13}{16}$"	$\frac{15}{16}$" to 1$\frac{1}{16}$"		7 lbs.
¼" *Color Clear* Plate		48" Max. Width 132" Max. Length Total Area 4800 sq. in.	70" Max. Width 132" Max. Length Total Area 9240 sq. in.				
¼" Heat Absorbing Plate	8" x 8"	48" Max. Width 100" Max. Length Total Area 4800 sq. in.	70" Max. Width 100" Max. Length Total Area 7000 sq. in.	$\frac{11}{16}$" to $\frac{13}{16}$"	$\frac{15}{16}$" to 1$\frac{1}{16}$"		
7/32" Colored Plate	8" x 8"	48" Max. Width 120" Max. Length Total Area 4800 sq. in.	60" Max. Width 120" Max. Length Total Area 6000 sq. in.	⅝" to ¾"	⅞" to 1"		6¼ lbs.
7/32" Blue Ridge Figured	8" x 8"	48" Max. Width 100" Max. Length Total Area 4800 sq. in.	48" Max. Width 100" Max. Length Total Area 4800 sq. in.	⅝" to ¾"	⅞" to 1"		6 lbs.
***Tuf-flex* (¼") in Polished Plate, *Color Clear*, Heat Absorbing and Colored Plate**	8" x 8"	40" x 48"	40" x 48"	$\frac{11}{16}$" to $\frac{13}{16}$"	$\frac{15}{16}$" to 1$\frac{1}{16}$"		7 lbs.

For building exteriors, sizes 48" wide or over will be manufactured with ½" air space only.
For Don Graf's Technical Sheets on *Thermopane* and *Thermopane* Installation Details for Wood Sash, write to your nearest L-O-F District Office.

THERMOPANE WARRANTY

For a period of five (5) years from date of shipment from our factory, we warrant that under normal conditions, material obstruction of vision resulting from film formation, or dust collection between the interior glass surfaces of Thermopane will not occur.

This warranty will be void unless Thermopane is installed in accordance with our installation instructions, or if any cutting, fitting, or nipping of edges or corners, is done, accidentally or otherwise, after shipment from our factory, or if the unit is damaged in handling, installation or otherwise.

Our maximum liability under these warranties shall be the delivery of replacement lights of Thermopane to the railroad shipping point nearest the place of installation.

These warranties do not apply when Thermopane is used in railroad cars or other vehicles.

L·O·F window glass

description

L-O-F Flat Drawn Sheet Glass—representing the result of more than 25 years of quality glass manufacturing—is exceptionally transparent and has a natural fire-finished surface. It is relatively free of distortion. L-O-F uses its own Flat Drawn Process in manufacturing sheet glass. The result is a better annealed pane that is subject to less breakage.

classification

Libbey-Owens-Ford Sheet Glass is classified on the basis of thickness as Window, Heavy Sheet and Picture Glass.

Window Glass is supplied in two thicknesses:

1. Single Strength, varying from 10 to 11½ lights per inch and identified by a *red* label.
2. Double Strength, varying from 7½ to 8 lights per inch, and identified by a *blue* label.

Window Glass is supplied in four standard qualities:

"AA"—Specially selected glass for high grade work.

"A"—Select glass of superior glazing quality.

"B"—Suitable for general glazing purposes.

Greenhouse—Below "B" in quality and available in double strength only in sizes 16″ x 18″, 16″ x 24″ and 18″ x 20″.

Heavy Sheet Glass is supplied in thicknesses of $\frac{3}{16}$″ and $\frac{7}{32}$″, and in qualities "AA", "A", and "B".

Picture Glass is furnished in three standard thicknesses listed in the chart to the right, and in "AA", "A", and "B" qualities.

uses

Libbey-Owens-Ford Sheet Glass for glazing windows, doors and storm sash in homes, apartments and other types of buildings; cabinet fronts and shelving.

Libbey-Owens-Ford Heavy Sheet Glass for glazing windows and doors where greater strength is required but where slight distortion is not objectionable; shelving; display cases; window ventilators and furniture tops.

Libbey-Owens-Ford Picture Glass for covering pictures, photographs, maps and prints; lantern slides; novelties and instrument dials.

suggested specifications

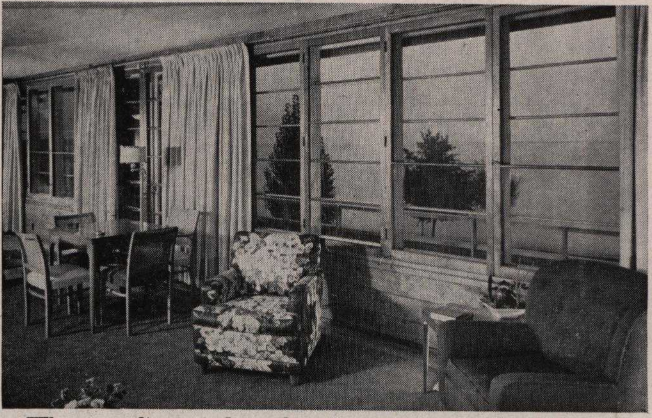
All sheet glass shall be Libbey-Owens-Ford Flat Drawn ("A") Quality (Double Strength). Each light shall bear the identifying L-O-F label.

packing

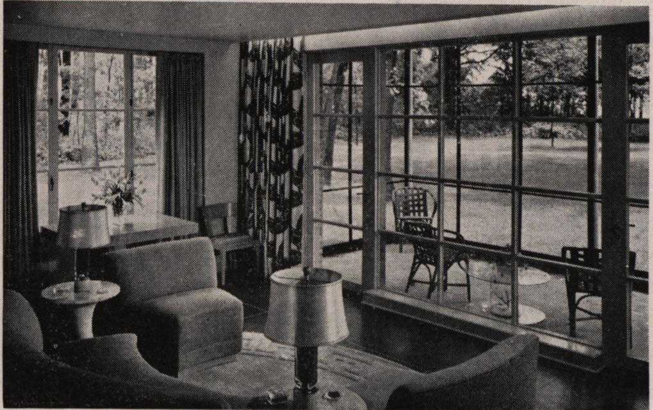
Shipped in Cushion Corner Cap packages, Libbey-Owens-Ford Sheet Glass is given neat, clean and practically moisture-proof protection.

chart for specifying

Classification	Quality	Thickness in Inches	Approximate Wt. Sq. Ft. in Ozs.	Maximum Size Furnished
Window Glass				
Single Strength	"AA," "A," "B"	.087-.100	19.50	90 united in.
Double Strength	"AA," "A," "B"	.118-.133	26	120 united in.
Double Strength	Greenhouse	.118-.133	26	16″ x 18″ 16″ x 24″ 18″ x 20″
$\frac{3}{16}$″ Heavy Sheet	"AA," "A," "B"	.187-.205	40	50 sq. ft.
$\frac{7}{32}$″ Heavy Sheet	"AA," "A," "B"	.210-.230	45	60 sq. ft.
Picture Glass				
19-23 lts. per in.	"AA," "A," "B"	.043-.053	9 to 11	60 united in.
Picture Glass				
15-17 lts. per in.	"AA," "A," "B"	.058-.068	12 to 14	60 united in.
Picture Glass				
12-14 lts. per in.	"AA," "A," "B"	.070-.080	15 to 17	60 united in.



Where quality window glass is desired, specify Libbey-Owens-Ford as did architect James F. Eppenstein of Chicago for this fine home.



To brighten this interior, architects Pereirra & Pereirra, Chicago, specified L-O-F Double Strength "A" Quality Window Glass.

L·O·F Tuf-flex* tempered plate glass

description

Tuf-flex is tempered plate glass made by a process of reheating and sudden cooling, as a result of which the outer surfaces are in a state of high compression while the central portion remains in tension, producing a condition highly resistant to breakage. The *Tuf-flex* process can be applied to both clear and colored plate glass.

properties

Tuf-flex is approximately three to five times stronger than regular plate glass in sustaining loads and resisting fracture due to strain, and approximately five to seven times more resistant to ordinary impact and three times more resistant to thermal shock. It is more resistant to bending stresses than plate glass. A piece of ¼″ *Tuf-flex* 42″ long and 12″ wide can be twisted through an angle of 20° without breaking. *Tuf-flex* retains the same appearance, clearness, hardness and coefficient of expansion as regular plate glass. When its limit of resistance is reached, *Tuf-flex* does not break like ordinary glass into jagged pieces, but disintegrates into small crystals.

uses

The greater strength of *Tuf-flex* has resulted in its wide use for visual entrance doors (specific data available in separate catalog in Sweet's, section 15b/2), ship's glazing, steam and oil pressure gauge covers, shelving, furniture, counter tops, show cases, and for enclosures in museums, zoological gardens and aquariums. Its ability to withstand impact makes *Tuf-flex* especially adaptable for balustrades, stair railings, push and kick plates on doors, windows in gymnasiums and sports arenas, and in jails, hospitals and mental institutions. The high resistance of *Tuf-flex* to thermal shock renders it advantageous as lenses for searchlights, floodlights, and spotlights where the heat generated by high intensity lamps would shatter regular glass; for sterilizing ovens, and for peep hole glasses in furnaces and lehrs.

special conditions

Tuf-flex can be ordered in circles, squares, rectangles and special shapes cut to pattern. It can also be supplied in a variety of edge finishes. However, since it cannot be cut after it is tempered, the exact sizes required must be specified, and intricate designs should be submitted for approval.

*Reg. U. S. Pat. Off.

This handsome railing of *Tuf-flex* polished plate glass was installed at the new Chicago ticket office of the Trans-World Airline. Notice that it casts no shadow on the stairs. Architects: Skidmore, Owings and Merrill, Chicago.

guide for specifying L-O-F Tuf-flex tempered plate glass

Kind	Thickness	Min. Width	Max. Size	Thickness Tolerance	Dimensional Tolerance
Regular Plate	¼″, ⅜″, ½″	2″	56″ x 108″	± 1/32″	± 1/16″
	⅝″, ¾″	2″	40″ x 100″	± 3/64″	± 1/16″
	⅞″, 1″, 1¼″	2″	40″ x 100″	± 1/16″	± 1/16″
Color Clear Plate	¼″	2″	56″ x 108″	± 1/32″	± 1/16″
Colored Plate	7/32″	2″	48″ x 72″	± 1/32″	± 1/16″
Golden Plate	7/32″	2″	48″ x 72″	± 1/32″	± 1/16″
Heat Absorbing Plate	¼″	2″	48″ x 72″	± 1/32″	± 1/16″

Circles and squares are available.

comparative modulus of rupture

Plate Glass	*Tuf-flex*
Average—6,000 lb./sq. in.	Average—30,000 lb./sq. in.

comparison of impact

Kind of Glass	2 Lb. Steel Ball Critical Height Dropped	11 Lb. Shot Bag Critical Height Dropped
¼″ Plate	Average 8 inches	Average 37 inches
¼″ *Tuf-flex*	Average 60 inches	Average 160 inches

resistance to thermal shock

Kind of Glass	Average difference in temperature °F required to cause failure
¼″ Plate	147° F
¼″ *Tuf-flex*	466° F

L·O·F heat absorbing plate glass

description

L-O-F Heat Absorbing Polished Plate Glass is a product of special chemical composition, pale bluish green in color, and made to absorb a high percentage of the infrared heat rays of the sun. Part of the absorbed heat is subsequently transferred to the interior, but a considerable portion is given off to the exterior, effecting a net reduction of the solar heat entering through the glass.

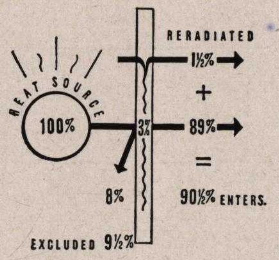
qualities

L-O-F Heat Absorbing Plate Glass ⅛″ thick excludes 29½% of the total solar radiation; ¼″ thick 38½% as compared with an exclusion of 9½% afforded by regular plate glass ¼″ thick. These figures are based on the assumption of 50% of the re-radiation of the absorbed heat in the glass to the interior and 50% to the exterior. This reduction of solar heat transmission, will produce a cooler atmosphere inside, resulting in lower initial cost for the air conditioning equipment and reduced cost of operation. L-O-F Heat Absorbing Plate Glass reduces sun glare, and provides light which is restful to the eyes and nerves.

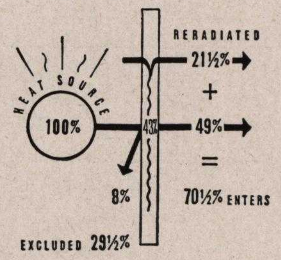
uses

L-O-F Heat Absorbing Plate Glass is particularly suited for glazing the windows of office and apartment buildings, hospitals, schools, factories, and other types of buildings where the exclusion of solar heat is a problem. Merchants whose wares are perishable will find Libbey-Owens-Ford Heat Absorbing Plate Glass beneficial for show windows. Because of its heat absorbing characteristics, this glass helps protect merchandise such as fruits, vegetables, candy, flowers, and other perishables, helps to keep it fresh much longer. It also is useful for windows of stores such as groceries, butcher shops, drug stores and ice cream parlors where refrigerating equipment may necessarily be in line with rays of the sun coming through show windows.

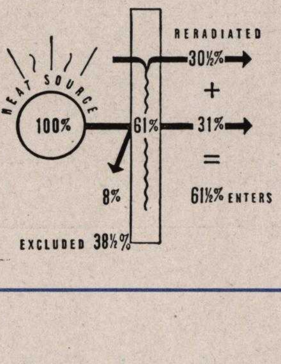
REGULAR ¼″ PLATE



⅛″ HEAT ABSORBING PLATE



¼″ HEAT ABSORBING PLATE



special processing

If desired, L-O-F Heat Absorbing Plate Glass can be supplied in the form of *Tuf-flex* (see page 11). This makes it stronger than plate glass and more resistant to impact and thermal shock.

L-O-F Heat Absorbing Plate Glass can also be incorporated as the outside light in *Thermopane* insulating units (see pages 6, 7, 8 and 9) in combination with regular plate glass on the inside. This will reduce the solar heat transmission to 90% as much as would occur through a single light of heat absorbing glass, or to 65 to 70% as much as would occur through *Thermopane* manufactured with two lights of clear glass.

The *Thermopane* arrangement is recommended for year-round insulation, since it most effectively reduces heat loss through windows in winter and heat gain in summer.

suggested specifications

All heat absorbing plate glass shall be L-O-F Heat Absorbing Polished Plate Glass of (. . . . .) thickness as manufactured by Libbey-Owens-Ford Glass Company, Toledo, Ohio.

guide for specifying

Thickness	Thickness Tolerance	Standard Maximum Width and Length	Maximum Size Special Order	Approx. Weight Lbs. per Sq. Ft.
⅛″	± 1/32″	40″ x 80″	55″ x 90″	1.64
¼″	± 1/32″	70″ x 100″	100″ x 130″	3.27

Comparative Properties
Libbey-Owens-Ford Heat Absorbing Plate Glass
and Regular Plate Glass

	Thickness	Per cent of Transmission		
		Total Visible Light	Total Radiation	Infrared Radiation
Regular L-O-F Plate	¼″	89	80	76
L-O-F Heat Absorbing Plate	⅛″	81	51	30
L-O-F Heat Absorbing Plate	¼″	71	36	11

L·O·F decoration on glass - bent glass

decoration on polished plate glass

Decoration on glass has practically unlimited possibilities, as suggested by the following processes:

surface sandblast—Uniform sandblasting over all or part of glass, in grades from very slight to complete removal of polished surface.

shaded sandblast—Gradations of shading ranging from natural surface to complete obscuration of polish.

deep sandblast—Decoration cut below surface of glass but without modeling or gradation.

carved sandblast—Cut to various depths below surface of glass for fine bas-relief or intaglio.

shaded and carved sandblast—May be combined in one decoration, achieving various tones with deeper cut accents.

painted (*air drying*)—Usually on back surface of glass; often used in connection with mirrors.

painted sandblast—Air drying decoration applied to sandblasted portions on face or back.

inlay—Thin glass, in variety of opaque or translucent colors, or silver-backed colored glass is inlaid into *Vitrolite* sandblasted to receive the inlay, or into ½″ or thicker plate glass with sandblasted surface.

laminated—Letters or decoration, in silhouette, cut from *Vitrolite* or thin colored glass and cemented to *Vitrolite* or other glass background.

This beautiful life-size panel in the children's reading room of the Toledo Public Library is a good example of what can be done with decoration on glass. It consists of an inlay of thin opaque glass and colored mirrored glass in *Vitrolite*. The colored silvered glass is decorated with different tones and designs in sandblast. Architects, Hahn & Hayes.

Decoration on glass is executed from architects' full size details or developed by L-O-F from scale drawings.

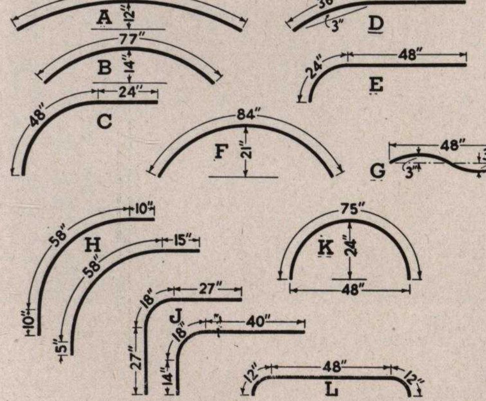
Note:—Processes such as fired-on ceramics on plate glass, leaded glass windows, acid etching, etc. may be secured through L-O-F dealers or jobbers.

L-O-F bent glass

Most bent glass shapes are produced by causing flat glass to form in a mould by the action of heat and gravity only. It is not a machined product, and is subject to more distortion and wider tolerances than flat plate or window glass.

explanation of diagrams

Dimensions on diagrams are to illustrate maximum limits of proportions. Radii of curves may not be less than 6″. Radii should be specified to outside surface of glass. Maximum rise of bends J and K must not exceed 36″. Depth of G bends not to exceed 1 in 16; example, pane 64″, depth 4″. Flat portions of bent glass cannot be kept entirely flat where large flat areas are required. It is recommended that flat portions be ordered as separate lights. It is recommended that bent *Vitrolite* panels should not exceed 6 sq. ft. in area for exterior work. For *Vitrolite* or Blue Ridge Glass specify which face of glass is concave or convex. Requirements for bends in glass of greater thicknesses than listed below or for sizes in excess of the maximum dimensions listed should be submitted for consideration.



maximum sizes of bends (in inches)

Bends		Plate Glass			Color Clear Plate		Heat Absorbing Plate	
	Thickness	⅛	$\frac{13}{64}$	¼	⅛	¼	⅛	¼
A, B, C, D, E, F, L.	Distance Around Bend	60 or 48	70 or 68	110	40	70	60 or 30	96 or 66
	Length	48 or 60	68 or 70	144	60	140	30 or 60	66 or 96

Bends	Colored Plate		Sheet Glass				Blue Ridge Glass		Vitrolite	
	Thickness	$\frac{7}{32}$	S.S.	D.S.	$\frac{3}{16}$	$\frac{7}{32}$	⅛	$\frac{7}{32}$	$\frac{11}{32}$	$\frac{7}{16}$
A, B, C, D, E, F, L.	Distance Around Bend	90	24	60 or 48	60	84	60 or 48	84 or 48	48	48
	Length	116	48	48 or 60	84	96	48 or 60	48 or 84	48	48
H, J, K.	Same as schedule above except that distance around bend may not exceed 78″.									
G	Same as in schedule above except that maximum distance around bend may not exceed 48″ and maximum length may not exceed 72″.									

BLUE RIDGE figured and wire glass

Libbey-Owens-Ford Glass Company is the United States Sales Agent for Blue Ridge Glass Corporation which manufactures the Blue Ridge Figured and Wire Glass, illustrated and described in this catalog.

description

Blue Ridge glass embraces a complete range of scientifically designed Figured and Wire Glass. In addition to plain rolled fire finish, three other types of surface processing are offered:

Satinol—a treatment of one or both surfaces which imparts a soft satin finish to the glass. This increases its obscurity and spreads the transmitted light uniformly over a wide area. Satinol surfaces do not finger mark or collect dust and dirt as does sandblasted glass. They can be cleaned with either a dry or slightly damp cloth.

Satinol finish, one surface, reduces light transmission about 3%. Satinol finish, two surfaces, reduces light transmission about 6%.

Frosting—primarily a functional treatment of the glass surfaces achieved by acid etching to improve the distribution of light.

Sandblasting—another surface treatment. This also enhances obscurity of the glass and spreads light in a circular pattern.

Sandblasting on one surface reduces light transmission about 16% and 20% to 30% when applied to both surfaces, depending on type of glass.

uses

For glazing in windows, doors, skylights and partitions to transmit and diffuse light, retard the entry of solar heat (Aklo) and to obstruct vision through the glass. Also widely employed in lighting fixtures, signs and shelving.

"securit process"

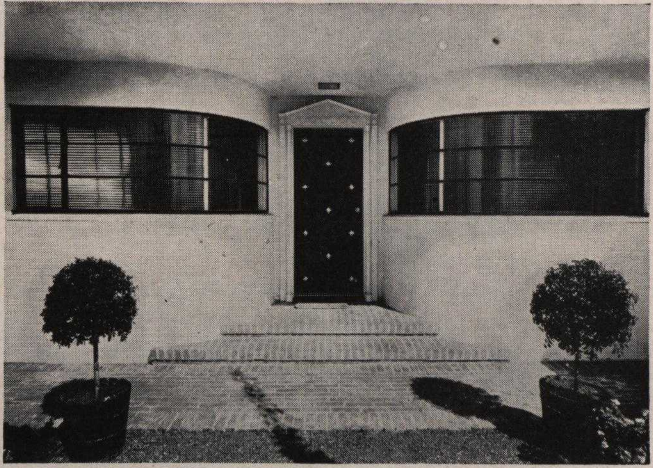
Most patterns can be "Securitized" (heat-tempered) to resist certain types of impact and thermal shock.

suggested specifications

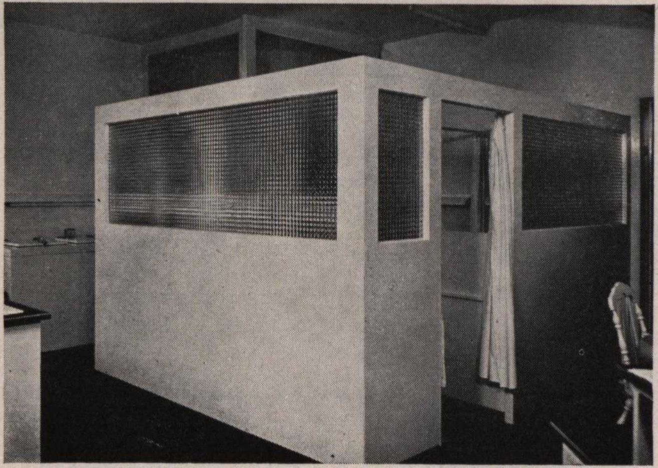
Where Figured or Polished Wire or Obscure glass is specified herein, or shown on plans, it shall be (......) inches in thickness and shall be (......) pattern (specify thickness and pattern desired), and shall be manufactured by the Blue Ridge Glass Corporation.

If a surface finish other than plain rolled is desired, the type of surface finish, such as Satinol or Frosted, should be specified.

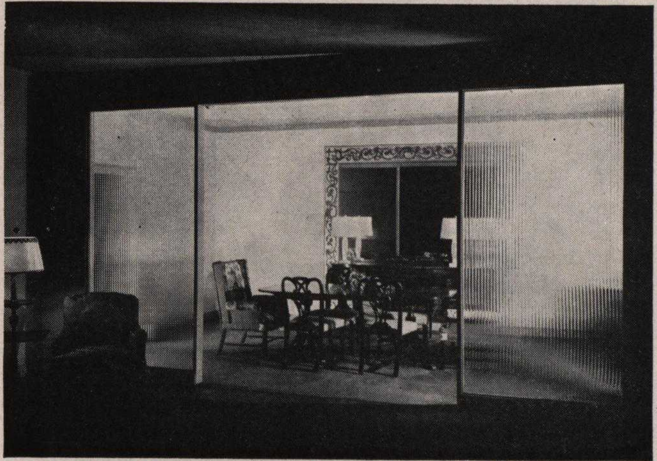
The Standard Satinol or Frosted (Glare Reducing) Finish Specification is: "Where Figured or Obscure glass is specified herein or shown on plans, it shall be (......) inches in thickness and shall be (......) pattern Satinol (one surface or two surfaces), or have Frosted, (Glare Reducing) finish on both surfaces, and each light shall bear the label of Blue Ridge Glass Corporation."



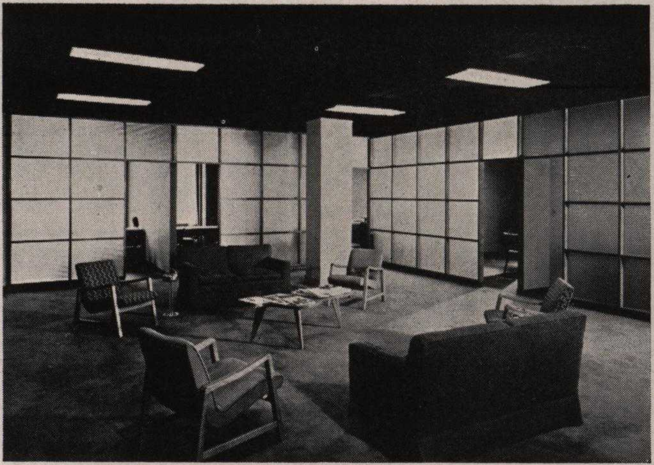
Bent Satinol Flutex for exterior glazing is used in the Oakland, California, office of architect Erwin M. Johnson.



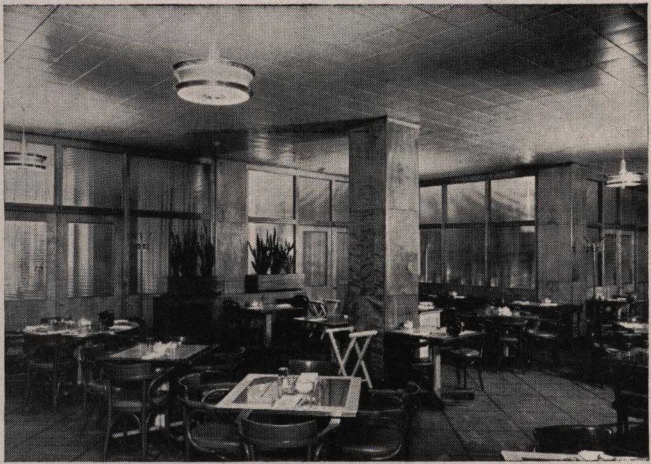
This blood bank in St. Mary's Hospital, Duluth, Minn., is glazed with Clear Doublex.



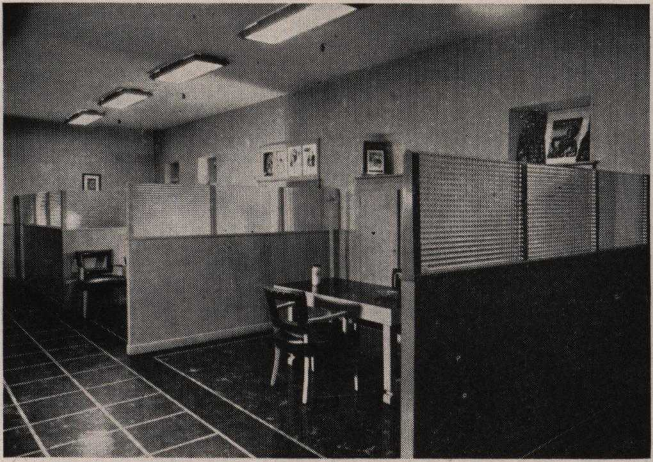
An inter-department translucent screen of Clear Flutex is found in Wanamaker's Furniture Department, Philadelphia, Pa.



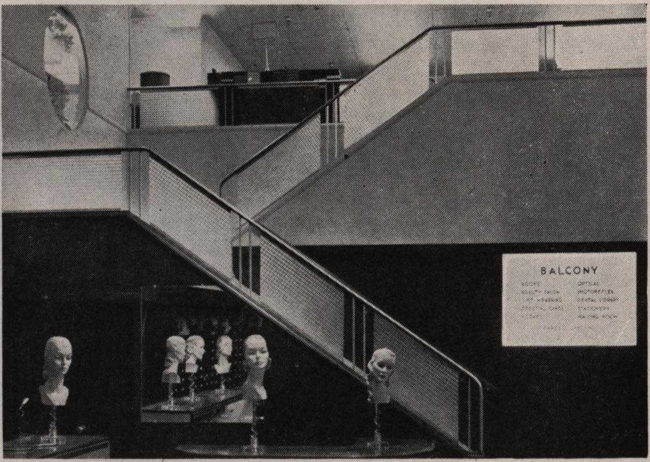
Alexette Glove Corporation, New York City, uses large office partitions of Satinol Louvrex. Designer: S. S. Silver Company.



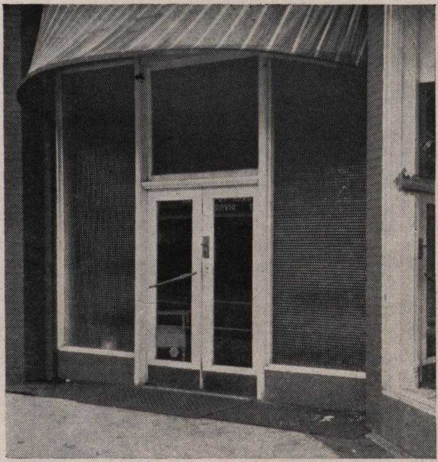
Interior partitions of Clear Flutex are used to set apart private dining rooms at the Commodore Perry Coffee Shop, Toledo, O.



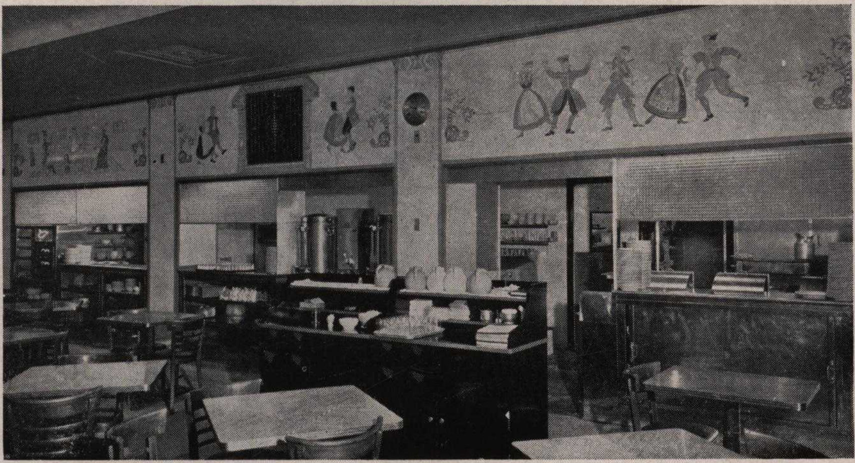
A display of Clear Doublex office partitions is seen in the New York City offices of Lester Martin Company. The effect is striking.



This smart stair-guard railing using Satinol Doublex was designed for Wolf & Dessauer Department Store, Ft. Wayne, Ind.

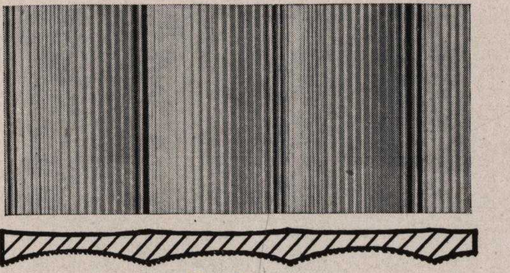


Biljac's storefront in Jersey City, N. J., makes an excellent use of Clear Doublex.



A translucent panel of Satinol Doublex screens is used in the Savarin Restaurant, Waldorf-Astoria Hotel, New York City.

five leading BLUE RIDGE patterns



Stylex

(Cross section shown actual size)

A rolled flat glass with one smooth side and one pattern side consisting of curved parallel concave waves about $\frac{3}{64}$″ deep. The crests of the waves are about ¾″ apart, the surface of each being striated with approximately 15 small equidistant ribs about 4/1000″ deep and parallel to the crests.

Made in ⅛″ and $\frac{7}{32}$″ thicknesses with fire-polished, ground and polished and Satinol finishes.

Approximate Light Transmission— unwired 78% (not made in wire glass).

USES—Decorative interior installations for partitions, wall panels, kitchen cupboard doors.

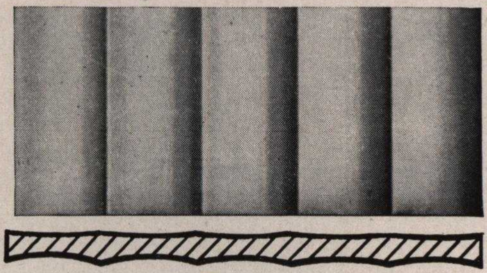
•

these smart patterns enable

Architects and Designers

to create pleasing and desirable interiors and exteriors

•



Linex

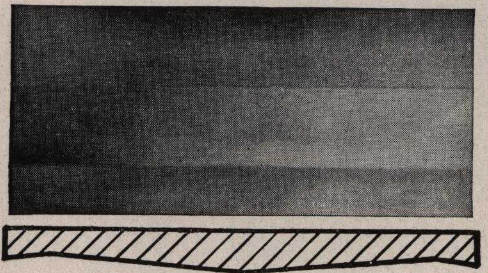
(Cross section shown actual size)

A rolled flat glass, one surface being smooth and the pattern side consisting of curved parallel concave flutes measuring about $\frac{3}{64}$″ deep. The crests of the flutes are approximately ½″ apart.

Linex is made in ⅛″ and $\frac{7}{32}$″ thicknesses in fire polished, ground and polished and Satinol finishes.

Approximate Light Transmission— unwired 80% (not made in wire glass).

USES—Decorative interior and exterior glazing.



Louvrex

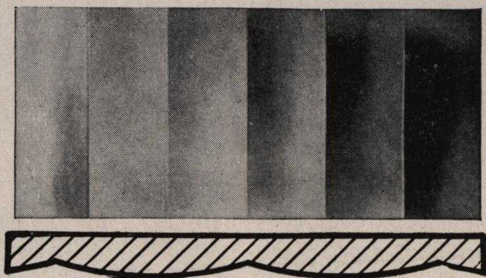
(Cross section shown actual size)

1 in. wide, alternately ascending and descending, plane-surfaced strips, resembling louvers in venetian blinds. Quite transparent but Satinol finish increases obscurity and diffusion.

Made ⅛ and $\frac{7}{32}$ in. thick with fire-finished surfaces and $\frac{7}{32}$ in. thick only with flat surface mechanically ground and polished; also with flat surface Satinol processed.

Approximate Light Transmission— unwired 90.4% (not made in wire glass).

USES—Interior and exterior glazing, partitions, transoms, etc.



Flutex

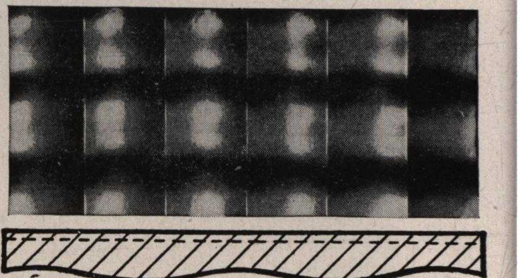
(Cross section shown actual size)

Pattern consists of adjoining convex flutes 1 in. wide.

Made in ⅛ and $\frac{7}{32}$ in. thicknesses with fire-finished surfaces and in $\frac{7}{32}$ in. thickness only with flat surface mechanically ground and polished; also with flat surface Satinol processed.

Approximate Light Transmission— unwired 89% (not made in wire glass).

USES—Same as those of Louvrex. Provides effect of sharper, more definite pattern. (*Note:* Satinol Flutex, $\frac{7}{32}$ in. thick, widely used in fluorescent light fixtures).



Doublex

(Cross section shown actual size, Broken line indicates right angle corrugations on back)

A double patterned glass whose corrugated design on one surface runs at right angles to fluted design on other surface, forming a pronounced directional effect.

Made in $\frac{7}{32}$ in. thickness, with maximum width of 54 in. and length of 136 in.

Approximate Light Transmission— 87%.

USES—Interior and exterior glazing, partitions, screens, illuminated wall panels, and other decorative purposes.

specifications for five leading Blue Ridge glass patterns

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Standard Max.* Width and Length	Surface				Approx. Weight Sq. Ft. Lbs. Glass Only
						Fire Polished	Ground and Polished	Frosted** Max. Width and Length	Satinol ***	
Louvrex	**Decorative Interior and Exterior Use**	**Slight**	**Alternate 1″ Angular planes**	⅛″	54″ x 132″	X			X	1¾ lbs.
				$\frac{7}{32}$″	54″ x 136″	X	X		X	2¾ lbs.
Flutex	**Decorative Interior and Exterior Use**	**Slight**	**Adjoining 1″ convex flutes**	⅛″	48″ x 132″	X			X	1¾ lbs.
				$\frac{7}{32}$″	54″ x 136″	X	X		X	2¾ lbs.
Doublex	**Decorative Interior and Exterior Use**	**Good**	**1″ Block Pattern**	$\frac{7}{32}$″	54″ x 136″	X			X	2¾ lbs.
Stylex	**Decorative Interior Use**	**Medium (Directional Spread)**	**Fine Ribs on Flute**	⅛″	48″ x 132″	X		30″ x 120″	X	1¾ lbs.
				$\frac{7}{32}$″	48″ x 136″	X	X	30″ x 120″	X	2¾ lbs.
Linex	**Decorative Interior and Exterior Use**	**Slight**	**½″ Concave Flutes**	⅛″	48″ x 132″	X		30″ x 120″	X	1¾ lbs.
				$\frac{7}{32}$″	48″ x 136″	X	X	30″ x 120″	X	2¾ lbs.

*In some patterns widths are available up to 60 inches depending upon stocks on hand.

**Frosted Glass provides excellent diffusion of light and excellent obscurity.

***Satinol Processed Glass provides good diffusion of light and good obscurity with minimum loss of light.

BLUE RIDGE wire glass

description

A continuous process wire glass wherein the mesh is chromium dipped to insure both clean wire and firmer adhesion of the glass to the wire. To insure greater strength, the wire is embedded as closely to the center of the glass as possible.

patterns

On the next page will be found descriptions of Hammered, Ribbed, Luminex, Skytex and Industrex patterned glass. These patterns are produced either with or without wire. Blue Ridge Aklo Heat Absorbing Glass in Hammered and Ribbed patterns can also be furnished with or without wire. In addition, Aklo Polished Wire Glass is produced in conventional hexagonal shaped mesh only. For information on Aklo Wire Glass, refer to pages 20, 21 and 22.

approved fire retardant

Blue Ridge Wire Glass is an approved fire retardant, bearing number R-2129 of Underwriters' Laboratories, Inc. The rules of the National Board of Fire Underwriters limit the size of wire glass which can be glazed in openings exposed to fire hazard. In no case shall the unsupported area of the glass measure more than 48 inches in either dimension or exceed 720 square inches (5 sq. ft.). Typical maximum sizes which satisfactorily meet that requirement are 15 x 48, 18 x 40, 20 x 36 and 24 x 30. It should also be noted that wire glass used for this purpose must be set in non-inflammable materials.

nuweld polished wire glass

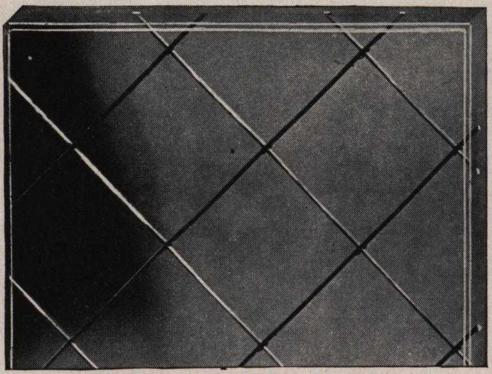
The wires in this glass are welded together at each intersection to form a pleasing diagonal pattern.

The wires are subject to some misalignment. Absolute symmetry of the wire pattern cannot be guaranteed. This product is advised for openings when vision plus security of non-scatterable fire-retardant glass is desired.

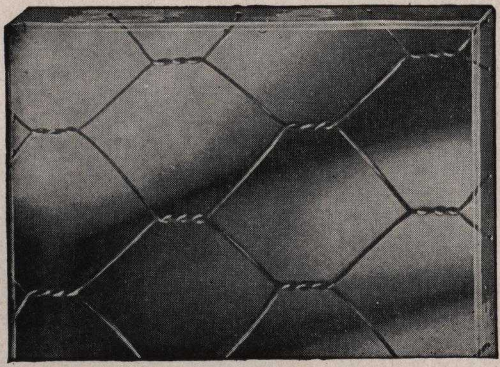
conventional polished wire glass

Used in all openings where clear vision and the security of non-scatterable, fire-retardant glass are desired. Note that wire is clean—no bubbles to mar the sharp outline or distort the vision.

Approved fire-retardant bearing number R-2129 of Underwriters' Laboratories, Inc.



neweld polished wire
(wire shown actual size)



conventional polished wire glass
(wire mesh shown actual size)

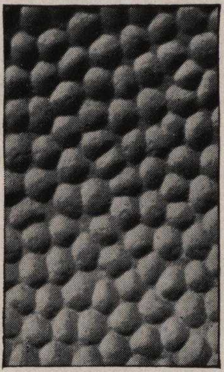
specifications for Blue Ridge wire glass

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Standard *Max. Width and Length	Surface: Fire Polished	Surface: Ground and Polished	Surface: Frosted** Max. Width and Length	Approx. Weight Sq. Ft. Lbs. Glass Only
Hammered	**Windows, skylights and partitions requiring non-scatterable, fire-retardant glass. Registered as Fire Retardant No. R2129 by Underwriters' Laboratories, Inc.**	**Medium**	**Raised Adjacent Lenses**	¼″	48″ x 144″	X		30″ x 144″	3½ lbs.
				⅜″	48″ x 90″	X		30″ x 90″	5 lbs.
				½″	48″ x 90″	X		30″ x 90″	6½ lbs.
Ribbed		**Medium (Directional Spread)**	**Fine Parallel Ribs**	¼″	48″ x 144″	X		30″ x 144″	3½ lbs.
				⅜″	48″ x 90″	X		30″ x 90″	5 lbs.
				½″	48″ x 90″	X		30″ x 90″	6½ lbs.
Luminex		**Slight**	**Smooth fine texture**	¼″	48″ x 144″	X		30″ x 144″	3½ lbs.
Skytex		**Good (Directional)**	**Parallel Ribs**	¼″	48″ x 144″	X		30″ x 144″	3½ lbs.
Industrex		**Medium**	**Compact Lens-shaped**	¼″	48″ x 144″	X		30″ x 144″	3½ lbs.
Hex. Mesh Polished Wire		**None**		¼″	60″ x 144″		X		3½ lbs.
Nuweld Polished Wire		**None**		¼″	60″ x 144″		X		3½ lbs.

*In some patterns widths are available up to 60 inches depending upon stocks on hand.

**Frosted Glass provides excellent diffusion of light and excellent obscurity.

practical patterned glass



Hammered

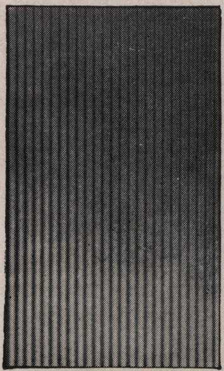
(Pattern shown actual size)

Series of raised, adjacent lenses diffuse light at moderate angle in all directions.

Made in ⅛, 7/32, ⅜ and ½ in. thicknesses unwired, and ¼, ⅜ and ½ in. wired—all with fire-polished surfaces, also with Frosted (Glare Reducing) Finish up to 30 in. wide.

Approximate Light Transmission—unwired 90.0%, wired 84.0%.

USES—Industrial glazing, both exterior and interior.



Ribbed

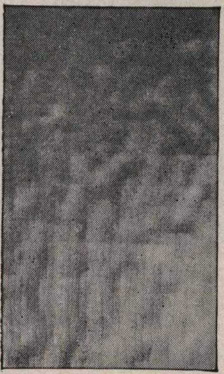
(Pattern shown actual size)

Pattern consists of approximately twenty-one fine parallel ribs per inch which spread light along one axis only, perpendicular to ribs. Usually glazed with ribs running vertically to diffuse light in horizontal plane.

Made in ⅛, 7/32, ⅜ and ½ in. thicknesses unwired, and ¼, ⅜ and ½ in. thickness wired—all with fire-polished surfaces also with Frosted (Glare Reducing) Finish up to 30 in. wide.

Approximate Light Transmission—unwired 84.4%, wired 78.4%.

USES—Factory glazing, skylights, etc. Plain and Frosted used in fluorescent light fixtures.



Luminex

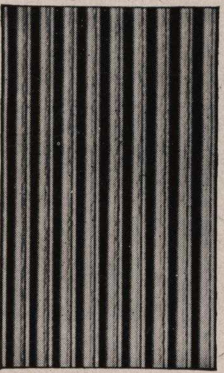
(Pattern shown actual size)

Almost transparent pattern, extremely fine texture, easy to clean, high light transmission, only slight diffusion.

Made in ⅛ in. and 7/32 in. thicknesses unwired and ¼ in. wired— fire-polished surfaces and Frosted (Glare Reducing) Finish up to 30 in. wide, also 7/32 in. thick with one or both sides Satinol Processed.

Approximate Light Transmission—unwired 88.4%, wired 82.4%.

USES—Recommended for industrial plants or general commercial glazing where desirable to admit maximum light. Both Frosted and Satinol excellent for fluorescent light fixtures.



Skytex

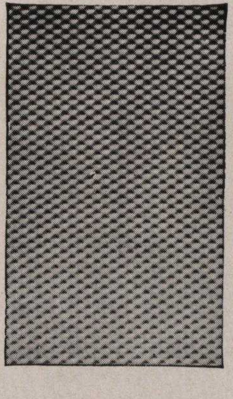
(Pattern shown actual size)

Obscure pattern of 8 parallel ribs per in.—drains off condensation, diffuses light along one axis only (perpendicular to ribs). Usually glazed with ribs vertical—spreads light in horizontal plane.

Made ⅛ and 7/32 in. thick unwired and ¼ in. wired fire-polished surfaces also Frosted (Glare Reducing) Finish up to 30 in. wide.

Approximate Light Transmission—unwired 78.9% wired 72.9%.

USES—Chiefly in skylights but equally suitable for general industrial glazing. Plain and Frosted used in fluorescent light fixtures.



Industrex

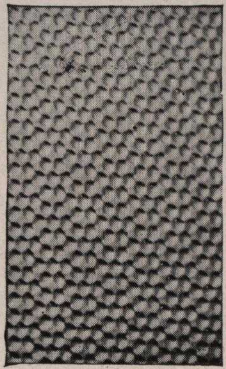
(Pattern shown actual size)

Tiny lens-shaped figures give uniform diffusion over a moderate angle, provide medium degree of privacy, are easily cleaned.

Made in ⅛ and 7/32 in. thicknesses unwired and ¼ in. wired—fire-polished surfaces, also Frosted (Glare Reducing) Finish.

Approximate Light Transmission—unwired 88.2%, wired 82.2%.

USES—Primarily for factory glazing but also adaptable to some types of commercial structures and to fluorescent lighting fixtures. Not recommended for partitions in office buildings, etc.



Diffusex

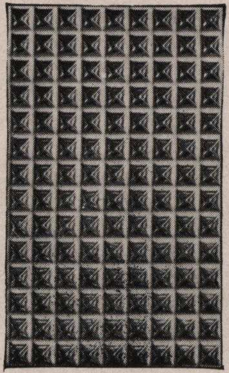
(Pattern shown actual size)

Small, slightly elevated lenses, grouped in attractive manner, spaced to avoid dirt-collecting pockets. Cleaned easily. Provides uniform illumination with moderate angle of diffusion.

Made in ⅛ and 7/32 in. thicknesses with fire-polished surfaces and in 7/32 in. thickness with smooth surface ground and polished. (Not made in wired glass.)

Approximate Light Transmission—87.6%.

USES—For interior and exterior glazing, partitions, transoms, etc.



Reglex

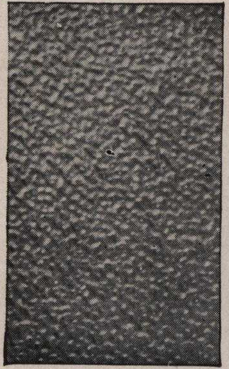
(Pattern shown actual size)

Design formed by pyramidal-shaped indentations— 64 to the square inch—which diffuse light remarkably well in a cross shaped light pattern. Provides obscurity.

Made in fire-polished surfaces ⅛ and 7/32 in. thick, and in 7/32 in. thickness with smooth surface ground and polished.

Approximate Light Transmission—unwired 52.3% (not made in wire glass).

USES—For general interior glazing, especially effective in partitions and doors. Suitable for use in fluorescent light fixtures.



Muralex

(Pattern shown actual size)

Finely engraved pattern, very easy to clean, fairly obscure, provides medium distribution of light at a moderate angle.

Made in ⅛ and 7/32 in. thicknesses with fire-polished surfaces and in 7/32 in. with smooth surface ground and polished.

Approximate Light Transmission—unwired 86.0% (not made in wire glass).

USES—Muralex used widely in partitions, doors and transoms, ceiling lights.

for varied industrial requirements

Velvex

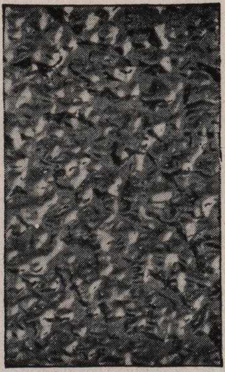
(Pattern shown actual size)

Semi-transparent, slightly diffusing, easily cleaned.

Made in ⅛ and 7/32 in. thicknesses unwired with fire-polished surfaces and also 7/32 in. thickness with one or both sides Satinol Processed. (Not made in wire glass.)

Approximate Light Transmission—89.0%.

USES—Interior glazing—shower stall doors, partitions, doors and transoms.



Pebblex

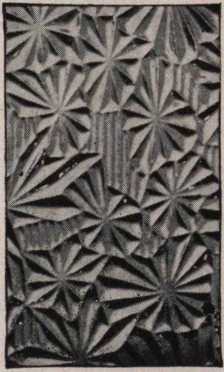
(Pattern shown actual size)

Irregular pebbled design, deeply imprinted, highly obscure, unusually brilliant in appearance, diffuses light at wide angles.

Made in ⅛ and 7/32 in. thicknesses with fire-polished surfaces and in 7/32 in. thickness with smooth surface ground and polished. (Not made in wire glass.)

Approximate Light Transmission—79.7%.

USES—Office partitions and general interior glazing. Provides well-lighted privacy.



Florex

(Pattern shown actual size)

Its brilliance is largely due to the quality of the glass since the imprinting is based on the principle of avoiding sharp grooves and corners as far as possible.

Made in ⅛ and 7/32 in. thicknesses with fire polished surfaces.

Approximate Light Transmission—unwired 86.2% (not made in wire glass).

USES—Interior glazing—partitions, shower stall doors, transoms and doors.

Pointex

(Pattern shown actual size)

A rolled glass, with one smooth surface and one covered with about 570 bosses per square inch. The small protrusions are irregular in size and rather oval in shape and rise about four-tenths of a thousandth of an inch. Pointex is semi-transparent, somewhat light diffusing and easily cleaned.

Approximate Light Transmission—unwired 92.5% (not made in wire glass.)

USES—Interior glazing in both plain and frosted finishes. It also is used for sign work in frosted finishes.

specifications for practical patterned glass

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Standard *Max. Width and Length	Surface: Fire Polished	Surface: Ground and Polished	Surface: Frosted** Max. Width and Length	Surface: Satinol***	Approx. Weight Sq. Ft. Lbs. Glass Only
Hammered	Industrial Glazing	Medium	Raised Adjacent Lenses	⅛″	48″ x 132″	X		30″ x 132″		1¾ lbs.
				7/32″	48″ x 136″	X		30″ x 136″		2¾ lbs.
				⅜″	48″ x 90″	X		30″ x 90″		5 lbs.
				½″	48″ x 90″	X		30″ x 90″		6 lbs.
Ribbed	Industrial Glazing	Medium (Directional Spread)	Fine Parallel Ribs	⅛″	48″ x 132″	X		30″ x 132″		1¾ lbs.
				7/32″	48″ x 136″	X		30″ x 136″		2¾ lbs.
				⅜″	48″ x 90″	X		30″ x 90″		5 lbs.
				½″	48″ x 90″	X		30″ x 90″		6 lbs.
Luminex	Industrial Glazing For Maximum daylight	Slight	Smooth, fine texture	⅛″	48″ x 132″	X		30″ x 132″	X	1¾ lbs.
				7/32″	48″ x 136″	X		30″ x 136″	X	2¾ lbs.
Pointex	General Glazing	Slight	Irregular Raised Bosses	⅛″ (thin)	48″ x 120″	X		30″ x 120″		1½ lbs.
Skytex	Industrial Glazing	Good (Directional Spread)	Parallel Ribs	⅛″	48″ x 132″	X		30″ x 132″		1¾ lbs.
				7/32″	48″ x 136″	X		30″ x 136″		2¾ lbs.
Velvex	Interior partitions, doors, transoms	Slight	Smooth mottled texture	⅛″	48″ x 132″	X		30″ x 132″	X	1¾ lbs.
				7/32″	48″ x 136″	X		30″ x 136″	X	2¾ lbs.
Industrex	Factory Glazing	Medium	Compact, lens-shaped	⅛″	48″ x 132″	X		30″ x 132″		1¾ lbs.
				7/32″	48″ x 136″	X		30″ x 136″		2¾ lbs.
Diffusex	Interiors for soft light diffusion	Medium	Elevated small lenses	⅛″	48″ x 132″	X				1¾ lbs.
				7/32″	48″ x 136″	X	X			2¾ lbs.
Pebblex	Interior Glazing	Good	Irregular-pebbled effect	⅛″	48″ x 132″	X				1¾ lbs.
				7/32″	48″ x 136″	X	X			2¾ lbs.
Reglex	Interior Glazing	Good	Regular Pyramidal Indentations	⅛″	48″ x 132″	X				1¾ lbs.
				7/32″	48″ x 136″	X	X			2¾ lbs.
Muralex	Finer Interior Glazing	Good	Finely engraved-indeterminate	⅛″	48″ x 132″	X				1¾ lbs.
				7/32″	48″ x 136″	X	X			2¾ lbs.
Florex	Interior Glazing	Good	Floral	⅛″	48″ x 132″	X				1¾ lbs.
				7/32″	48″ x 136″	X				2¾ lbs.

*In some patterns widths are available up to 60 inches depending upon stocks on hand.

**Frosted Glass provides excellent diffusion of light and excellent obscurity.

***Satinol Processed Glass provides good diffusion of light and good obscurity with minimum loss of light.

BLUE RIDGE Aklo heat absorbing

description

"Low Expansion" Figured and Wire Glass of blue-green color having extremely high resistance to passage of the sun's infrared heat energy and transmitting daylight of a pleasing and eye-resting quality.

patterns

Normally made in Hammered and Ribbed patterns, but sometimes available in Hammered only. When use of Aklo Ribbed glass is contemplated, it would be advisable to have a glazing contractor make certain that the pattern could be supplied when the glass will be needed. Also available in transparent Polished Wire glass.

glare reduction

In addition to its function of retarding the passage of excessive sun heat through its windows and skylights, Aklo Figured and Wire glass is widely used to overcome both the direct and reflected glare of sunlight. For this latter purpose, frosted surfacing should always be specified instead of the natural fire finish. ¼" thickness is recommended for all installations in which reduction of glare is a primary objective.

standard specifications

Specified by U. S. Govt. as 'Type H.' "All flat and sloping skylights and all windows designed to receive obscure figured glass, except skylights or windows facing north or permanently shaded, shall be glazed with AKLO INDUSTRIAL GLASS having a coefficient of expansion of approximately 20% less than ordinary figured or wire glass. (Here designate the desired pattern and whether wired or unwired, and desired thickness.) To combine reduction of glare with exclusion of solar heat specify FROSTED AKLO........,(Hammered or Ribbed pattern),........ (Wired or unwired, and thickness, ¼").

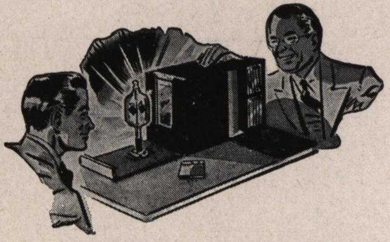
"(Aklo Polished Wire ¼" if transparency is desired.)

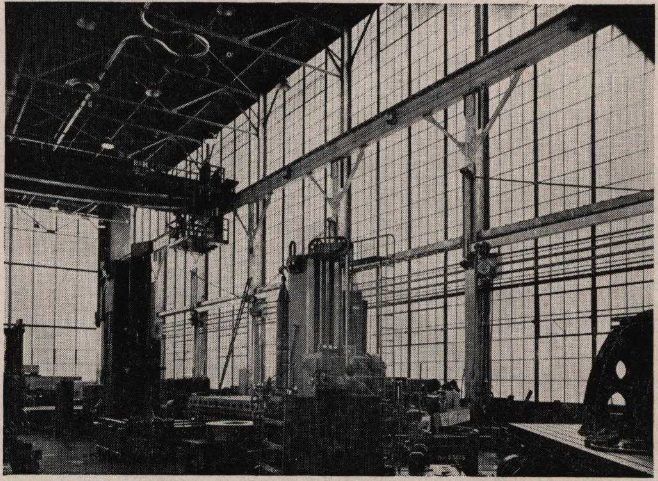
"All other skylights and window areas facing north or in permanent shade, and designated on the drawings to receive obscure glass, shall be glazed with non-heat absorbing glass of the patterns, thicknesses and types indicated herein."

Blue Ridge Aklo Glass complies with requirements for E-9-Type H Glass for absorbing or intercepting ultraviolet and infrared rays mentioned on page 8, Federal Specification DDG-451. Aklo Glass also conforms to those specifications as outlined in paragraph No. 24 of May 1939 Glass and Glazing Section of the Procurement Division of the Treasury Dept.

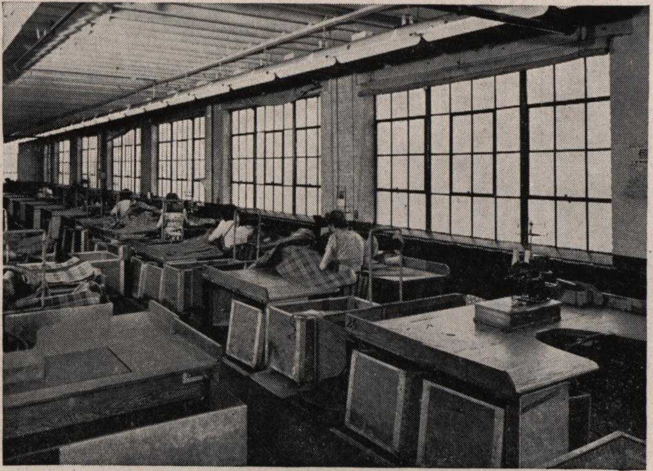
radiometer test

Unusual heat absorption qualities of Blue Ridge Aklo glass are dramatically demonstrated with this highly sensitive radiometer. You will want to see this demonstration in your office.





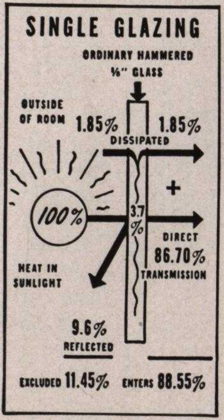
Frosted Aklo Hammered glass is used for glazing the windows of the Giddings & Lewis Machine Tool Company, Fond du Lac, Wisconsin. This reduces the sun's heat. Architect: Frank Stepnoski & Son, Fond du Lac.

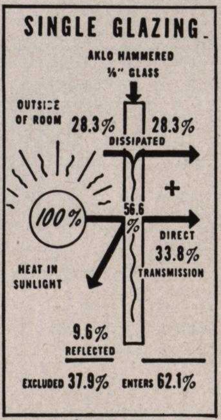


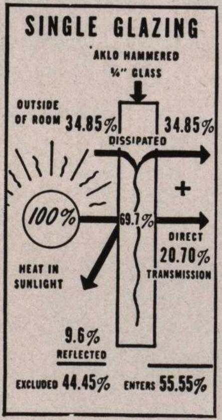
Reduction of the sun's glare is important to such a textile mill as the Crawford Manufacturing Company of Richmond, Va. In addition, the heat absorbing qualities of Frosted Aklo make working conditions more pleasant.

and glare reducing glass

how Aklo protects against sun heat radiation.







These charts show the flow of solar heat through ordinary Hammered glass and Aklo. They graphically display how Aklo traps that heat and prevents it from entering the building. This makes work areas more comfortable in summer weather.

representative list of Blue Ridge Aklo users

Fairfax Mills, Fairfax, Ala.
Goodyear Tire & Rubber Co., Gasden, Ala.
Dwight Mfg. Co., Alabama City, Ala.
Aluminum Co. of America, Phoenix, Ariz.
Southern Kraft Corp., Camden, Ark.
Pacific Mfg. Co., Santa Clara, Cal.
Hughes Aircraft Corp., San Diego, Cal.
Rohr Aircraft Corp., San Diego, Cal.
New Departure Mfg. Co., Bristol, Conn.
The Bullard Co., Bridgeport, Conn.
Vickers, Inc., Waterbury, Conn.
Pratt & Whitney Aircraft Corp., Hartford, Conn.
Pan-American Hangar, Miami, Fla.
Florida Linen Supply Co., Miami, Fla.
L & H Shirt Company, Cochran, Ga.
Dixie Cotton Mills, La Grange, Ga.
Columbus Mfg. Co., Columbus, Ga.
West Point Mfg. Co., West Point, Ga.
Container Corporation, Chicago, Ill.
Twin Disc Clutch Co., Rockford, Ill.
Buick Motors Corp., Norpaul, Ill.
Naval Ordnance Plant, Forest Park, Ill.
Republic Aviation Corp., Evansville, Ind.
McQuay Norris Mfg. Co., Connersville, Ind.
Aluminum Co. of America, Lafayette, Ind.
Tobin Packing Co., Fort Dodge, Iowa
Cessna Aircraft Corp., Wichita, Kan.
Boeing Aircraft Corp., Connell, Kan.
Menzel Co., Louisville, Ky.
Nash Kelvinator, New Orleans, La.
T. J. Murphy Fur Co., Lewiston, Me.
Revere Copper & Brass Co., Halethorpe, Md.
Glenn L. Martin Co., Middle River, Md.
Danzer Metal Works, Hagerstown, Md.
Ludlow Mfg. & Sales Co., Ludlow, Mass.
United States Rubber Co., Chicopee Falls, Mass.
Pacific Mills, Lawrence, Mass.
Leland Gifford Co., Worcester, Mass.
Ford Motor Bomber Plant, Willow Run, Mich.
Extruded Metals Corp., Grand Rapids, Mich.
Fisher Tank Corp., Grand Blanc, Mich.
Chevrolet Gear & Axle Corp., Hamtramck, Mich.
Long Hall Laundry, Kansas City, Mo.
American Can Co., St. Louis, Mo.
Curtiss-Wright Corp., Robertson, Mo.
Westcott Valve Co., St. Louis, Mo.
Martin Bomber Plant, Ft. Crook, Neb.
Waumbec Mills, Manchester, N. H.
Hyatt Roller Bearing Division, Clark Township, N. J.
Singer Mfg. Co., Finderne, N. J.
De Laval Steam Turbine Co., Trenton, N. J.
General Cable Corp., Perth Amboy, N. J.
Rochester Products Div.—General Motors Corp., Rochester, N. Y.
New York Airbrake Co., Watertown, N. Y.
Worthington Pump Co., Buffalo, N. Y.
American Locomotive Co., Auburn, N. Y.
Republic Aviation Corp., Farmingdale, L. I., N. Y.
Concord Knitting Co., Concord, N. C.
Spofford Mills, Inc., Wilmington, N. C.
Parksdale Mills, Inc., Gastonia, N. C.
Arlington Mill, Gastonia, N. C.
Rosemary Mfg. Co., Roanoke Rapids, N. C.
Lake City Malleable, Inc., Ashtabula, Ohio
Canton Drop Forge, Canton, Ohio
Goodyear Rubber Co., Akron, Ohio
Curtiss-Wright Corp., Columbus, Ohio
Thompson Aircraft Products Co., Euclid, Ohio
Sylvania Electric Products Co., Emporium, Pa.
Landis Tool Co., Waynesboro, Pa.
National Biscuit Co., Philadelphia, Pa.
Curtiss-Wright Propeller Div., Beaver, Pa.
Naval Air Station, Davisville, R. I.
Bowling Green Spinning Co., Clover, S. C.
Ware Shoals Mfg. Co., Ware Shoals, S. C.
Brandon Corp., Greenville, S. C.
Equinox Mills, Anderson, S. C.
Rivermont Orchids, Inc., Signal Mountain, Tenn.
Tennessee Eastman Corp., Kingsport, Tenn.
Shelby Paper Box Co., Memphis, Tenn.
General Tire & Rubber Co., Waco, Tex.
Dow Chemical Co., Velosco, Tex.
Haggar Pants Co., Dallas, Tex.
Naval Ammunition Depot, Portsmouth, Va.
U. S. Marine Corps, Quantico, Va.
Sylvania Electric Products Co., Huntington, W. Va.
Corning Glass Works, Parkersburg, W. Va.
United States Rubber Co., Eau Claire, Wis.
Giddings & Lewis Machine Co., Fond du Lac, Wis.

comparative qualities of Blue Ridge Aklo glass and ordinary (lime) glass

Thickness and Kind of Glass	Heat						Efficiency
				Total Heat of Sun Entering Room Through Glass			
	Heat and Light in Sun's Rays	Heat and Light Reflected from the Glass	Heat of Sun Absorbed by the Glass	Reradiated by the glass	Transmitted directly through glass	Total heat entering through the glass	Ratio of light transmission to heat passing directly through glass
HAMMERED PATTERN							
⅛″ Aklo Glass—Unwired	100.00%	9.60%	56.60%	28.30%	33.80%	62.10%	1.87:1
⅛″ Ordinary (Lime) Glass—Unwired	100.00	9.60	3.70	1.85	86.70	88.55	1.03:1
⅛″ Frosted Aklo Glass—Unwired	100.00	9.00	68.00	34.00	23.00	57.00	1.87:1
¼″ Aklo Glass—Unwired	100.00	9.60	69.70	34.85	20.70	55.55	2.58:1
7/32″ Ordinary (Lime) Glass—Unwired	100.00	9.60	7.40	3.70	83.00	86.70	1.07:1
¼″ Aklo Glass—Wired	100.00	9.60	71.40	35.70	19.00	54.70	2.57:1
¼″ Ordinary (Lime) Glass—Wired	100.00	9.60	11.20	5.60	79.20	84.80	1.07:1
¼″ Frosted Aklo Glass	100.00	9.00	77.40	38.70	13.60	52.30	2.58:1
RIBBED PATTERN							
⅛″ Aklo Glass—Unwired	100.00	8.50	56.50	28.25	35.00	63.25	1.87:1
⅛″ Ordinary (Lime) Glass—Unwired	100.00	8.50	3.60	1.80	87.90	89.70	1.03:1
⅛″ Frosted Aklo Glass—Unwired	100.00	9.00	68.30	34.15	22.70	56.85	1.87:1
¼″ Aklo Glass—Unwired	100.00	8.50	70.80	35.40	20.70	56.10	2.58:1
7/32″ Ordinary (Lime) Glass—Unwired	100.00	8.50	7.20	3.60	84.30	87.90	1.07:1
¼″ Aklo Glass—Wired	100.00	8.50	72.60	36.30	18.90	55.20	2.57:1
¼″ Ordinary (Lime) Glass—Wired	100.00	8.50	12.70	6.35	78.80	85.15	1.07:1
¼″ Frosted Aklo Glass	100.00	9.00	77.80	38.90	13.20	52.10	2.58:1
FOR COMPARISON ONLY							
(See important note on Page 10)							
⅛″ Aklo Glass—Polished	100.00	8.00	54.00	27.00	38.00	65.00	1.87:1
⅛″ Ordinary (Lime) Glass—Polished	100.00	8.00	3.70	1.85	88.30	90.15	1.03:1
¼″ Aklo Glass—Polished	100.00	8.00	71.00	35.50	21.00	56.50	2.57:1
¼″ Ordinary (Lime) Glass—Polished	100.00	8.00	7.50	3.75	84.50	88.25	1.07:1

specifications for Blue Ridge Aklo heat absorbing glass

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Standard *Max. Width and Length	Surface			Approx. Weight Sq. Ft. Lbs.
						Fire Polished	Ground and Polished	Frosted** Max. Width and Length	
				figured glass					
AKLO—Hammered	**For windows, skylights and transoms to substantially reduce sun's heat, admit daylight and improve illumination**	**Medium**	**Raised Adjacent Lenses**	⅛″	**48″ x 132″**	**X**		**30 x 132**	**1¾ lbs.**
				¼″	**48″ x 136″**	**X**		**30 x 136**	**3½ lbs.**
AKLO—Ribbed		**Medium (Directional Spread)**	**Fine Parallel Ribs**	⅛″	**48″ x 132″**	**X**		**30 x 132**	**1¾ lbs.**
				¼″	**48″ x 136″**	**X**		**30 x 136**	**3½ lbs.**
				wire glass					
AKLO—Hammered	**Same as for AKLO Heat Absorbing Figured Glass. However, being wired each is a non - scatterable, fire-retardant glass**	**Medium**	**Raised Adjacent Lenses**	¼″	**48″ x 144″**	**X**		**30 x 144**	**3½ lbs.**
AKLO—Ribbed		**Medium (Directional Spread)**	**Fine Parallel Ribs**	¼″	**48″ x 144″**	**X**		**30 x 144**	**3½ lbs.**
AKLO—Polished Wire (Hex. Mesh only)		**None**		¼″	**60″ x 144″**		**X**		**3½ lbs.**

***Available up to 60 inches depending upon condition of stocks on hand.**

****Frosted AKLO provides excellent diffusion of light, high degree of obscurity and effective glare reduction.**

BLUE RIDGE Securit figured rolled glass

description

Securit is made by subjecting Blue Ridge glass, which has been annealed in the regular manner, to a special process of heat treatment and rapid cooling that creates a highly compressed zone at the outer surface. The tensile strength of Securit as determined by its modulus of rupture is over 3½ times greater than in a piece of regular Blue Ridge glass of similar pattern and thickness. When the limit of its strength is reached, Securit disintegrates into small, rounded, relatively smooth particles.

In addition to its greater strength, Securit is extremely resistant to temperature variations which may affect a whole sheet or only portions.

physical characteristics

Securit's physical characteristics determined by laboratory tests follow:

Modulus of Rupture—28,800 lbs. per sq. in. of cross section.
Hardness (Mohs' Scale)—6
Thermal Endurance—400°F. differential
Safe Working Temperature (maximum) —650° F.
Maximum sizes:
Square—30″ x 30″ Oblong—30″ x 72″

advantages

Due to its special heat treatment, Securit Blue Ridge figured glass possesses the following advantages:

Four to seven times stronger than regular rolled figured glass.

Withstands impact shock far beyond the limits of ordinary rolled glass.

More resistant to thermal shock.

A safer glass since, when it does break, it disintegrates into small diced particles rather than large fragments with sharp jagged edges.

available forms

Figured Glass $\frac{7}{32}$″ thickness—Hammered, Ribbed, Luminex, Skytex, Velvex, Industrex, Diffusex, Florex, Pebblex, Reglex, Muralex, Louvrex and Flutex.

Figured Glass ⅜″ and ½″ thickness—Hammered, Ribbed, Luminex, Velvex, Skytex and Industrex.

Figured Aklo Glass ¼″ thickness — Hammered, Ribbed.

Figured Glass $\frac{7}{32}$″ polished one side—Diffusex, Pebblex, Muralex, Reglex, Louvrex and Flutex.

Note: Wire glass cannot be "Securitized."

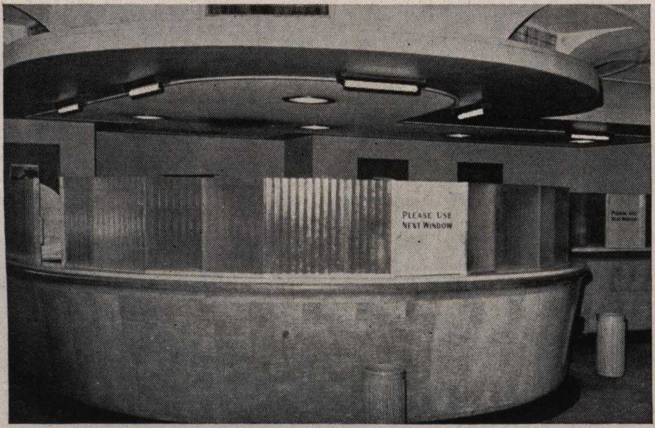
uses

Office doors or partitions which are subjected to considerable slamming or bumping.

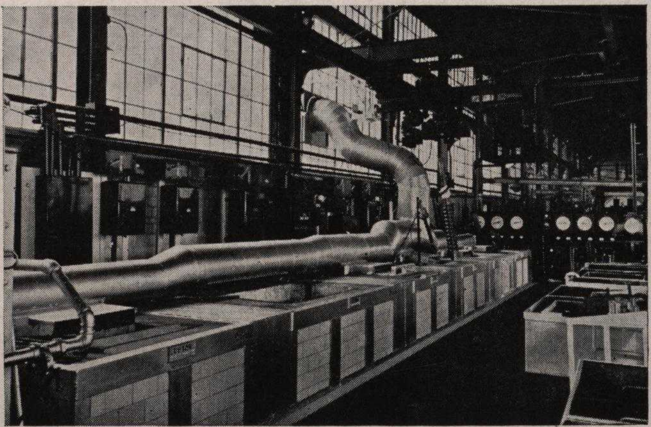
Lighting fixture diffusing glass, and lenses for lamps.
Ceiling sash or sub-skylights.
Tops for cutting tables or counters.
Push plates and kick plates.
Commercial and residential shelving.
Guards around areas subjected to intense heat.
Balustrades and stair railings.
Windows frequently broken by flying materials.

With its special physical qualities, numerous patterns and surface treatments, Securit is a versatile product. Practical uses are being found for it almost daily. The Blue Ridge Glass Corp., Kingsport, Tenn., welcomes inquiries from architects and opportunities to solve their problems.

Warning: Securit tempered glass is supplied by Blue Ridge Glass Corp. in the actual shapes and sizes required, but it cannot be subsequently cut or ground. Cutting or puncturing the surface or chipping the edges will cause immediate disintegration of the glass.



Securit office railing of Satinol Louvrex Glass is used in this Las Vegas, New Mexico ticket office of the Union Pacific Railroad. This application of Securit Louvrex is both practical and handsome.



Salt fumes and intense heat punish the windows in this Salt Curing Bath Department of the Dayton Forge & Heat Treating Co., Dayton, Ohio. To overcome this the windows were glazed with Securit Hammered Aklo.

SERVICES

Architects and designers will find it helpful to consult Libbey-Owens-Ford engineers, competent to answer special questions pertaining to the design and installation of the many types of plate and structural glass made at our factory.

REG. U. S. PAT. OFF.

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•

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